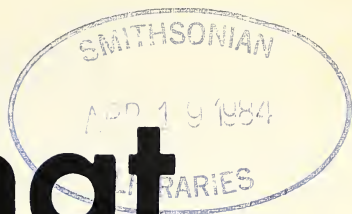


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No. 1



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The Chat

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WINTER 1984

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Editor	Eloise F. Potter, Route 3, Box 114 AA, Zebulon, N.C. 27597
General Field Notes	David S. Lee, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 1505 Brooks Avenue, Raleigh, N.C. 27607
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—A Common Snipe dines by twilight at the edge of a lake. (Photo by Fred L. Johns)

Breeding Status of the Grasshopper Sparrow in the Coastal Plain of the Carolinas, with Notes on Behavior

DOUGLAS B. McNAIR

Breeding reports of Grasshopper Sparrows (*Ammodramus savannarum*) from the coastal plain of the Carolinas are few. Craighill found the species in summer at Rocky Mount, N.C. (Pearson et al. 1942). Murphey (1937) said it was common in the Savannah Valley and rare in contiguous uplands around Augusta, Georgia, and Aiken, S.C., during the breeding season, and this probably included localities in the Sandhills. Sprunt and Chamberlain (1949) cited its summer occurrence in Aiken County, presumably based on Murphey's report. Norris (1963) found four singing males in a mowed hayfield in the AEC area, Aiken County, on 4 June 1958. Several pairs and one young were seen near Columbia, Richland County, on 30 July 1952 (Chat 16:103).

I found three breeding localities below the fall line in South Carolina in 1979 (Chat 44:24, 52). Ten to 15 pairs were estimated at Shaw Air Force Base, Sumter County. Ten pairs were estimated at McIntire National Guard Air Base, Richland County. Juveniles were seen at both sites. One adult, acting as if on territory, was seen 10 km SE of Columbia, Richland County, on 12 August.

I found four breeding localities below the fall line in North Carolina in 1981. Three pairs (and several juveniles) were present in Derby, Richmond County. Two birds, including a male singing on territory, were found 15 km S of Rockingham, Richmond County, on 27-28 July. Thirty-five to 40 pairs were estimated at the Laurinburg airport, Scotland County. An estimate in 1982 indicated that perhaps 50 to 60 pairs were present. Ten to 12 pairs were estimated at the Lumberton airport, Robeson County. Juveniles were seen at the last two sites. In addition, R. Davis (Chat 45:24) discovered three singing males on 28 July 1980 at the New Hanover County airport near Wilmington. He saw an adult and a possible juvenile there on 30 July 1981 (Chat 46:25) and an immature was present on 20 August (Chat 46:55). Crutchfield and Mason (Chat 45:110) reported a singing bird near Fayetteville on 18 May 1981.

Additional breeding-season records occur in the coastal plain for Georgia, Florida, and other Southeastern States. One Georgia record, aside from Murphey's report, was of five singing males (one collected) found in a field on 26 July 1947, 5 km E of Marshallville, Macon County (Burleigh 1958)). Norris (1963) cites Denton, who said Grasshopper Sparrows were found below Augusta in summer across the Savannah River from the AEC Plant; Denton (1977) did not mention this locality in the *Annotated Checklist of Georgia Birds*. Several birds were present at two Florida localities north of known sites of the Florida race, *A. s. floridanus*, but the race involved at each of the two sites was unknown (Howell 1932). Breeding in coastal-plain localities also has been recorded from Virginia (Smith 1968), Alabama (Imhof 1976), and other states both north of Virginia and west of Alabama.

The breeding record at Derby is the first for the North Carolina Sandhills, and there are only six published sight records for this region. They are: one on 1 March 1926 near Pinehurst (Skinner 1928); one on 12 November 1978 near Hoffman in the

Sandhills Game Management Area (Chat 43:42); one from 7 February to 17 March 1979 at a feeder in Pinehurst (Carter and Jones 1981); one on 29 April 1979 at Fayetteville (Chat 43:101); another singing near Fayetteville on 18 May 1981 (Chat 45:110); and three near Fayetteville, at Fort Bragg in western Hoke County, on 3 August 1982 (Chat 47:32).

The Derby site is an 8-ha sandy pasture 1 km NW of Derby along SR 1003, and the pasture is 3 to 8 years old. The most numerous plant species are Bermuda Grass (*Cynodon dactylon*) and Plantain (*Plantago aristata*). Marsh-fleabane (*Pluchea camphorata*) is well distributed. Also present are *Haplopappus divarictus*, *Lespedeza* sp., and Dog-fennel (*Eupatorium capillifolium*). The dead stems of last year's growth of many of these forbs provide important perch sites.

Three pairs of Grasshopper Sparrows were present, and juveniles were seen in July. I discovered a nest on 22 May when I saw a Grasshopper Sparrow in or very near it; the bird gave a "rodent run" for 3 m and then flew. The nest depression was 14 cm in diameter and 6 cm deep. The nest surface was level with the ground, and a tuft of grass overlay three-fourths of the top. The nest faced northeast and was on a level, scantily vegetated area. A *lespedeza* 2 m away was the only prominent perch for 22.5 m. The presence of a fecal sac in the nest and the bird's behavior toward the nest suggest it was occupied in the current year.

I have only general observations on habitat selection of other coastal-plain breeding localities I located in the Carolinas in 1979 and 1981. The McIntire N.G.A.B. was a meadow (1 to 1.5 m high) with moderate stem density and almost no woody vegetation. Both Lumberton airport and Shaw A.F.B. had extensive short (0.3 to 0.6 m) grass with scattered low forbs and shrubs; the former site was partly surrounded by soybean fields. The Laurinburg airport had a great variety of grasses and forbs; woody plants and soybean fields were also present. The two sites near Columbia, S.C., and Rockingham, N.C., were soybean fields and cultivated fields, respectively. Population densities at these sites ranged from low to high, comparable to sites elsewhere in the Grasshopper Sparrow's range (Johnston and Odum 1956, Smith 1968, Whitmore 1979, and others).

Additionally I would like to provide the following incidental local behavioral and habitat notes.

Foraging habitat and behavior.—Soybean (*Glycine max*) fields may lie adjacent to Grasshopper Sparrow breeding habitats in the coastal plain of the Southeastern States. Soybean fields, as well as other monoculture crops, may provide alternative food and protection compared to grassland or herbaceous breeding habitats. Sparrows will use soybean fields for cover. I have found no evidence of nests placed in soybean fields. Grasshopper Sparrows may forage on insects and grass seeds within soybean fields. Sparrows may obtain either type of food on the ground or on a soybean plant, though I have not observed sparrows obtaining food while perched in a soybean plant. Soybean plants offer poor mechanical support for alighting sparrows; the plants usually bend over and the sparrow is forced to depart. Sparrows will perch on Johnson Grass (*Sorghum halepense*), *Euphorbia nutans*, or other herbaceous plants that lie within soybean fields, even when these plants are shorter than surrounding soybean plants. I have some observations of sparrows feeding above ground on culms of Johnson Grass. The sheathed stem of Johnson Grass provides adequate support for perching; sparrows

may feed at the distal end of the plant, though most birds perched and ate at least 0.8 m from the top.

Singing perches.—Grasshopper Sparrows prefer elevated perches (Smith 1968). Most available perches in forbs in the coastal plain are less than 1.6 m above ground. Fences and a few short woody plants such as Red Cedar (*Juniperus virginiana*) and pines (*Pinus* sp.) are used as perch sites. Airfield structures—runway and taxi lights and Vasi structures—are commonly used as perch sites. One persistent sparrow at the Laurinburg airport used a volleyball net placed 3 m high as well as a signal area cleared for traffic control. Favored singing sites could often be determined without seeing a bird, by the amount of excreta present on plants or man-made structures.

Heat stress.—Gular fluttering was often observed on hot days ($> 30^{\circ}\text{C}$), especially at midday in July and August. Gular fluttering was particularly noticeable in birds perched on airfield structures. I observed no panting until 1000. I observed birds panting in the open after I flushed them from cover. Some of these individuals were flushed from soybean fields, which may provide a cooler microclimate than Grasshopper Sparrows normally find in their breeding habitats.

Other behaviors.—The longest distance I observed a bird fly was 40 m. Most flushed or unflushed individuals flew less than 25 m.

Disturbance to Grasshopper Sparrows by moving aircraft appeared minimal. Sparrows continued to sing from runway and taxi lights during aircraft arrivals and departures. Revving-up of powerful aircraft engines prior to takeoff caused nearby singing males to depart, but these birds quickly returned to their perch sites after aircraft departure.

ACKNOWLEDGMENTS

I thank T. Howard for identification of several plant species.

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Department of Biological Sciences, Clemson University, Clemson, S.C. 29631

BOOK REVIEW

BIRDS

John Andrews. 1983. Exeter Books, New York. Illustrated. Bibliography. Index. 80 p. Price not indicated.

This 9 x 12½-inch book is an artistic pleasure, with 180 photos and drawings in full color. Several dozen artists and photographers made contributions. The text brings nothing new to the experienced ornithologist, but the information will be most helpful to the novice. The author covers evolution, flight, migration, courtship, and conservation. Then he discusses habitats—tundra, northern forests, temperate woodlands, tropical forests, grasslands, savannahs, and deserts.

The writing is straight-forward and easy to understand, without talking down to the reader. Many well-done small drawings make it easy to follow the text.—LCF

Status of the House Finch in South Carolina, Including Discovery of Two Nests in Clemson

PAUL B. HAMEL and STEVEN J. WAGNER

We here review the status of the House Finch (*Carpodacus mexicanus*) in South Carolina and report discovery of two nests of House Finches located in South Carolina. Neither nest produced young.

The occurrence of House Finches in South Carolina through 1979 has been summarized by Potter et al. (1980). Apparently the first individual was observed in Greenville on 20 December 1966 (Grimm and Shuler 1967). In March 1967 a male House Finch was trapped, banded, and photographed in hand at Hartsville (Morrison 1967). Tail feathers from this bird provide the first material evidence of the House Finch from South Carolina (CM 58.27). The third published record is of an individual in Sumter in the winter of 1972-1973 (Teulings 1973).

Numbers recorded on Christmas counts have increased steadily since 1974, when five were reported from Clemson (LeGrand 1975; Table 1). LeGrand (1977) pointed out that the birds were most frequently found in the piedmont; his notion has been thoroughly confirmed in subsequent years.

Breeding in South Carolina was first suspected near Rock Hill in 1976 (Boatwright 1977, LeGrand 1977), a year after the first breeding record in the Carolinas was made at Charlotte, N.C. (Teulings 1975). The first conclusive breeding record for South Carolina was reported by Grimm (1979) from Greenville in 1979. Breeding may also have occurred at Columbia in 1982 (Eggleston 1983). However, each of these records consisted of fledged young or family groups, not of an actual nest. By all indications, the population of the birds in this state, as elsewhere in the East, is expanding rapidly (Bock and Lepthien 1976, Potter et al. 1980, Hamel et al. 1982, Kricher 1983).

On 13 May 1983 at 1525 EST, Hamel found a nest of House Finches with a female incubating two eggs. This was the first recorded nesting of the species in the Clemson area. As in earlier reports (Eggleston 1983, Ballard 1980, Grimm 1979, Boatwright 1977), the birds were nesting in suburban habitat. We began watching the pair on 25 April when we first heard singing by the male and saw him feeding the female in the courtyard between two classroom buildings on the Clemson University campus. During the next 3 weeks we frequently noted singing by both members of the pair. On numerous occasions the female begged for and received food from the male. Their activities were concentrated in an area of about 4 ha including several campus buildings, lawns, a number of small River Birches (*Betula nigra*), isolated mature oaks, and many ornamental shrubs. The nest was 2.1 m above ground, near the top of a small ornamental shrub (*Juniperus* sp.). Only 5 minutes after Hamel discovered the nest, a Blue Jay (*Cyanocitta cristata*) ate the eggs. Defense efforts of the adults and of an American Robin (*Turdus migratorius*) were ineffectual. Similar mobbing of a jay by robins and House Finches was observed on 30 May.

For the 3 weeks following destruction of the clutch, we saw House Finches singing and courting as before in the original area and at other locations within 300 m. On 14

TABLE 1. Christmas Bird Count Records of House Finches
in South Carolina, 1974-1982.

Year	1974	1975	1976	1977	1978	1979	1980	1981	1982
House Finches Counted	5	0	9	1	3 ⁺¹	44	288	64	415

¹House Finches were listed as "count week only" in Clemson (Hamel and LeGrand 1979).

July, Wagner discovered another nest of House Finches 9 m above ground in an ornamental Ginkgo (*Ginkgo biloba*) 250 m from the first site. A bird was sitting on the nest at the time, and a male was nearby in a tree. We could not determine whether these individuals were the same as those observed earlier. By 19 July this nest had been destroyed, leaving fragments of perhaps 3 eggs on the ground.

The first nest measured 65 x 60 mm inside diameter, 130 x 115 mm outside diameter, and 40 mm deep. It was constructed primarily of Chickweed (*Stellula media*), small amounts of Crab Grass (*Digitaria sanguinalis*), and juniper, and was lined with a variety of man-made fibers, including binding twine, discarded cigarette filters, and cigarette papers. This nest (CUVC 1809) was placed in the Clemson University Vertebrate Collections. As far as we know, it is the first nest of *Carpodacus mexicanus* collected in South Carolina.

Three birds with unpneumatized skulls, two of them females, which were collected in Clemson in November 1980 and deposited in the Clemson University Vertebrate Collections (CUVC 1309, 1310, and 1311), may be the only whole specimens from South Carolina.

ACKNOWLEDGMENTS

We thank Stanlee Miller for collecting the nest. The manuscript was improved by incorporating his, Sid Gauthreaux's, and Harry LeGrand's comments.

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Department of Biological Sciences, Clemson University, Clemson, S.C. 29631

Backyard Birding

... with Gail T. Whitehurst

Backyard Birders, your observations on bird behavior and feeding habits may be more important than you think! Oftimes, but not always, what you see may be well known and documented and published. When it comes to the every day, garden variety of common birds, there is still much to be learned and perhaps you can make a significant contribution to the literature. Never assume that something interesting is well known just because you have seen it.

A case in point was brought to my attention when reading the Spring issue of *Chat* (Vol. 47, No. 2). In the General Field Notes department there was an article titled "Brown-headed Nuthatches Store Pine Seeds." My first reaction was, "So what else is new?" I had been aware of this behavior for a number of years. As I read on, however, I realized that this article was intended to provide the "first *published* descriptions of food-storing behavior in the Brown-headed Nuthatch."

My yard and those surrounding have several Loblolly Pines and old scraggly Virginia Pines that are visited the year around by both Brown-headed and White-breasted Nuthatches (and in winter by Red-breasted). For a number of years, I had noted that when the pine cones ripen and seeds begin to fall in late October and early November, the number of nuthatches present picks up. Closer observation showed that the birds were removing seeds from the newly opened cones and taking same to cracks and crevices in the bark of the same tree, or a nearby pine. The nuthatches then proceeded to poke the seeds into these cracks, and also into old, empty cones still hanging on the trees. Later on, in winter, these birds along with chickadees, titmice, and Downy Woodpeckers would retrieve the seeds and eat them. When, in winter, there were sunflower seeds to be had, all of the above, except the Downy, would take seeds from the feeder and store them in much the same way as they had done with the pine seeds.

Feeling that such vague memories were not sufficient to publish, I began a watch this fall when the pine cones opened. Sure enough, the little nuthatches were busy as bees. This time, I made a note of time and place. On a fair, mild morning of 7 November 1983, from 0945 until 1000 hours, I watched two Brown-headed Nuthatches busily removing fresh seeds from a Loblolly Pine and flying to an adjacent pine. They then proceeded to poke these seeds into crevices in bark and into old cones.

On 13 November, it was cloudy and cold at 0845 as I noted the Brown-headed Nuthatches again removing new seeds and storing them. Seeds were falling rapidly from the trees that morning, some, no doubt, dislodged by the nuthatches. Again, at 0750 on 17 November, when it was fair and cold, the nuthatches were quite active as they worked. Nearly every seed removed from one tree was stored in another. I puzzled about this need to transport seeds from one tree to another. Perhaps it was a habit developed eons ago by the little birds as means to insure a winter supply of food should one tree be destroyed in some manner. Perhaps the constant movement and flitting from tree to tree was designed to confuse other birds looking for seeds.

To make such observations of tiny nuthatches in tall pines takes time and a good pair of binoculars. Distractions are many, for when the seeds begin to ripen and fall, there are numerous other species of birds feasting on pine seeds: Dark-eyed Juncos, American Goldfinches, Purple and House Finches, Tufted Titmice, and Carolina Chickadees and if, around, Evening Grosbeaks and Pine Siskins.

Have You Ever Noticed?

The field guides point out as an aid to identification of Rufous-sided Towhees and Fox Sparrows the fact that both species scratch on the ground with both feet at the same time. But we have also seen White-throated Sparrows scratch in this same manner. Have you?

It is fairly widely known that on occasion Red-headed Woodpeckers may be seen flying out from a perch (especially a dead tree or power pole) and "hawking" insects. I have not been so fortunate as to observe this behavior, Red-heads being in short supply in these parts. However, I was surprised recently (3 November 1983, late afternoon) to watch a Yellow-bellied Sapsucker fly out from the side of an old Black Cherry tree and catch some small insects in the air. He repeated this several times.

Vireo Vignettes

When I first became interested in bird watching, I despaired of ever seeing—really seeing—a Red-eyed Vireo. I learned the rising and falling song and saw the underparts of birds swinging high in the hardwoods many, many times before, after several years of frustration, a courting pair finally let me see the red eyes and other field marks well enough so I could add the species to my life list.

The summer our home was under construction (1966), I discovered nests of both the Red-eyed and the Yellow-throated Vireo in our wooded yard that lies in the dogleg of a fairway at the Zebulon Country Club and slopes down to a spring. The latter species nested again the following summer, but has been seen only as a transient since then. Apparently fragmentation of the woodlands made the site unsuitable for nesting. One or two pairs of Red-eyeds have continued to breed here annually. I have watched them courting, building nests, incubating eggs, and tending young—young cowbirds as well as their own offspring. You might say I'm on intimate terms with this once elusive species.

Solitary Vireos, like the White-eyed and—on one occasion—the Bell's, occur in the yard as transients. On 20 May 1983 I discovered a Summer Tanager nest in the yard and watched it every moment I could spare until the young fledged. While doing so, I could hear the frontyard Red-eyed Vireo singing to my left and the backyard male singing to my right.

Occasionally these birds gave their catlike call note, and from time to time they sounded just like Solitary Vireos. I assumed that the cool morning temperatures were causing the uncommonly slow songs. Sometimes the neighborhood Carolina Chickadees, Red-eyed Vireos, and Brown Thrashers joined the tanagers in scolding me while I examined the contents of the nest. By 9 June the tanagers had active young in their nest. If the female was reluctant to return to the nest and feed the offspring, her mate would chase her toward the nest. During one of these chases, he was assisted by a Solitary Vireo.

After that incident, I paid close attention to the vireo songs, and soon became convinced that I had a pair of Solitary Vireos on territory. I watched as one and then the other of the pair sang. At times the two birds scolded me while I sat watching the tanager nest. "Shu-shu-shu-shu," they said, sounding much like a scolding Gray Squirrel.

In the late afternoon of 11 June, I found the Solitary Vireos building a nest in a drooping fork about 20 feet above ground in a spindly young Red Oak near the spring. Both members of the pair were bringing fluffy white material, apparently bits of oak galls. Having read that Solitary Vireos will abandon a nest if it is watched too closely while under construction, I left immediately, with one of the pair following me back to the tanagers' nest, scolding all the way.

The next morning I could see no progress in the nest construction, though both Solitary Vireos were still on territory and upset about the attention I was paying to the fledgling Summer Tanagers. On 13 June I heard a Solitary Vireo singing. It flew to the nest; poked its bill into the structure at several places, singing all the while; and flew away, still singing. I suspect this performance was intended to decoy me away from the new nesting site.

Although I never found a second nest, a pair of Solitary Vireos remained in the neighborhood all summer. I frequently heard them across the first leg of the fairway at the edge of a small pond that is fed by my spring, but sometimes they were across the other leg of the fairway along my route to the mail box. The area covered was quite large, approximately 25 acres. On 23 June a pair exhibited territorial behavior in the wooded lot beside my mail box, and I assume this is where they nested. I heard singing, scolding, and the sharp, descending "vee-u" note almost daily through 24 July and occasionally in August. On 9 September I began hearing the birds regularly on my morning walks. On 11 September one was singing and at least two more were scolding simultaneously beside the pond across the fairway. On 12 September I watched two Solitaires as they did imitations of White-eyed Vireos. They rushed the "chick-per-o-wee" and omitted the customary concluding "chick," but they might have fooled me if I had not seen them. At the pond I found two more Solitaires. One sang the regular song while the other scolded and did White-eyed imitations. I can find no mention of Solitary Vireos performing White-eyed Vireo vocalizations in the general literature.

A cold front passed the evening of 12 September, and I have not heard Solitary Vireos since then. I assume they have gone south for the winter. Although the species has long been known to breed in Wake County, the apparent nesting near Zebulon extends the range slightly to the east. I hope the Solitary Vireos will return next spring and let me become better acquainted with them.—ELOISE F. POTTER, Route 3, Box 114 AA, Zebulon, N.C. 27597



Roundtable

... with Louis C. Fink

An Observation of Violent Behavior in Bald Eagles

The Cape Cod Museum of Natural History sponsored a boat tour down the Inland Waterway in the fall of 1983. The leader was Robert N. Scott, the captain of the vessel was Mark Carpenter, and participants included Sears Crowell and Dorothea Gifford, all of whom identified the birds involved in the incident described below as Bald Eagles. The account written by Capt. Carpenter was forwarded to this department by bird-bander Erma J. (Jonnie) Fisk, author of *The Peacocks of Baboquivari*, a book based on some of her field journals and presently being sold for the benefit of The Nature Conservancy.

On 5 October 1983 the sailing vessel *Morning Star* dropped anchor at 1430 in the South Santee River, S.C., 200 yards south of the I.C.U.

After disembarking a party in the dinghy for crabbing, I was working about deck and heard a noise above. Three mature Bald Eagles were wheeling above and slightly aft. From an altitude of about 60 feet, two of the birds repeatedly attacked the third with talons and beak. I counted three such midair attacks before the bird was forced to the water. No fish were involved. The bird hit the water 100 to 150 feet off the stern and was repeatedly attacked from above. Losing interest, the attacking eagles first circled above and then retreated to a nearby island, watching from a clump of dead trees. The eagle in the water struggled weakly to fly as the wind (SW at 15 to 20 knots) continued to push the bird away from us... Eventually it was lost from sight, and a subsequent search by dinghy failed to recover the bird. The attacking pair remained in the area for several hours before leaving.

Although the observers offer no explanation for the violent behavior they witnessed, Capt. Carpenter's report does seem to eliminate competition for food as a probability. Perhaps it is significant that mating reportedly takes place in the Florida Bald Eagle population from late September through October, a period encompassing the date of the incident.

Crazy Behavior

Jefferson City, Mo., had a drought last summer. Farmers complained that hummingbirds were eating red insulators on electrified fences.

Addendum for Gail Whitehurst

Gail's delightful column, "Backyard Birding," contained some immutable laws for the unwary. May I add a few observations?

A good rule for seeing new species: Announce in a loud voice that you are tired and are through for the day. At that point, the most interesting find will appear.

Visit that particular sanctuary which hosts that one bird you must add to your life-list: The warden will assure you that the bird was plentiful until yesterday.

Entertain a neighbor who discovers you are interested in birds: The neighbor will describe in detail a bird in her back yard which just has to be an Ivory-billed Woodpecker or a King Rail. (I remember one such neighbor in Atlanta who described a Ring-necked Pheasant at his feeder. I was more than skeptical until he brought me a color photo.)

Eagle Fund

National Audubon has offered \$1,000 for information leading to arrest and conviction of the persons who shot two Bald Eagles in South Carolina. A fund has been established to increase such rewards and for an educational campaign. Send contributions to Eagle Fund, National Audubon Society, P.O. Box 1268, Charleston, S.C. 29402.

Endangered Species

Our Bald Eagle population dropped from 12,843 to 12,098 (1982 to 1983) according to the National Wildlife Federation. North Carolina's winter population rose from one bird to 16.

Whooping Cranes number 80 at Aransas National Wildlife Refuge, 15 at Grays Lake N.W.R. in Idaho, and 30 in captivity.

The world's population of California Condors has increased by 33%, from 20 birds to 27. This is the result of a breeding project by the Audubon Society, U.S. Fish and Wildlife Service, and two California zoos.

Is the Ivory-billed Woodpecker really extinct? Peter Riggs, a student at Oberlin College in Ohio, spent 3 months in eight States interviewing 75 people who think they might have seen the bird. He said, "There are ten ivory-billed sightings which can be documented, three of them for sure."

Ironic Tale of the New Bird Book

The Audubon Society Master Guide to Birding was in this reporter's Christmas stocking and is being enjoyed. The conditions of publication are ironic. The "Audubon Society" trademark is used under license from National Audubon Society. Type for this book about North American birds was set in Syracuse, N.Y., but color reproductions were made in Switzerland, and printing and binding were done in Japan!

(Additional Items on Pages 26 and 28)

General Field Notes

DAVID S. LEE

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Green-backed Heron Spends Two Consecutive Winters on Pond in Northwestern South Carolina

ALAN AVAKIAN

Department of Biological Sciences
Clemson University, Clemson, S.C. 29631

On 3 January 1981 Dan Pettigrew and I saw an immature Green-backed Heron (*Butorides striatus*) on a farm pond 1 mile E of Pendleton, S.C., during the Clemson, S.C., Christmas Bird Count (Amer. Birds 35:502, Chat 45:78). The bird was seen several times later in the 1981 winter season by other observers. The following winter a mature Green-backed Heron was seen on 29 January by Carl Helms, the Clemson University Ornithology class, and me on the same farm pond east of Pendleton, and I sighted the bird again a week later. However, it was not seen in the 1982-1983 winter season.

Sprunt and Chamberlain (1970) state that a few Green-backed Herons spend the winter in the coastal areas of South Carolina, but they consider the species uncommon at this time of year. There is no mention of any inland winter records for the state. Potter et al. (1980) also state that this bird's winter range is restricted to coastal South Carolina. Lowery (1974) notes that the Green-backed Heron is rare even as far south as Louisiana after mid-November. The only winter record of a Green-backed Heron reported in *The Chat* during the 1970s was one seen at Raleigh, N.C., on 6 December 1977 (Chat 42:61), but in December 1982 stragglers were noted in North Carolina at Fayetteville, Chapel Hill, Mattamuskeet National Wildlife Refuge, and Hatteras (Chat 47:76).

The pond on which the Green-backed Heron was sighted covers approximately 2 ha. A fairly large Beaver impoundment lies directly behind the pond's dam, offering more suitable habitat for the bird. This pond, in the piedmont at 275 m elevation, was drained in the mid-to-late 1970s. Although it was not restocked, it does have many small bream as an excellent food source for the bird. Nearby are at least three other farm ponds that could provide additional feeding habitat.

Green-backed Herons may have bred on this farm pond in 1981 and 1982, as evidenced by the sightings of both mature and immature birds during the course of those breeding seasons. However, no nests were found either summer.

These facts and observations bring to mind some important questions concerning the biology and winter strategy of the bird(s). Foremost, was the immature bird sighted

in 1981 the same bird that overwintered in 1982? And if so, was this bird a male? The importance here is that males overwintering on their breeding grounds have the opportunity to establish breeding territories in optimal habitats before other males arrive from their wintering areas. Also, an overwintering bird would not have to expend energy to make the long migration to and from Central and South America as do most other Green-backed Herons. On the other hand, such a bird is taking the chance that its food source may become impossible to reach if ice forms on the pond. Unfortunately, these questions cannot be answered with the information at hand. When similar occurrences of birds overwintering out of their range are detected in the future, it would be interesting to catch, age, sex, and color band the bird so as to answer some of these questions.

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A 1977 Record of a Black-bellied Whistling-Duck from Lee County, S.C., Comes to Light

ELWOOD M. MARTIN

Office of Migratory Bird Management
Laurel, Maryland 20708

A report on a Black-bellied Whistling-Duck (*Dendrocygna autumnalis*) collected in North Carolina in 1968 (Chat 45:41-42) reminded me of a Black-bellied Whistling-Duck wing from South Carolina that I examined several years ago. Since 1961 the U.S. Fish and Wildlife Service has conducted an annual nationwide survey, in which selected waterfowl hunters are asked to send in one wing from each duck they shoot during a season. From such wings, biologists are able to estimate the species, age, and sex compositions of the harvest. In early 1977 I examined the wing of a Black-bellied Whistling-Duck, apparently an adult, which was shot near Manville, Lee County, S.C., on 20 January 1977 by R.E. Kuhne of Columbia. The sex of the bird could not be determined with certainty from the wing. The habitat was a small farm pond surrounded by gums. The bird was alone, but Dr. Kuhne also found Wood Ducks (*Aix sponsa*) on the pond.

The wing was retained for the Service's collection as an oddity. As is the case with most such extralimital records of waterfowl, it was assumed to have escaped from captivity, and no thought was given to reporting it in ornithological circles until I saw the article on the North Carolina bird. As a result, I prepared this report and forwarded the wing to the Charleston Museum for inclusion in the state collection. William Post informs me that this is the first specimen record of this species for South Carolina (CM 1983.155), and that the species will now be added to the state list in Provisional II category (specimen, but possibly of an escaped captive).

Barnacle Goose in South Carolina

HARRY E. LeGRAND JR.
331 Yadkin Drive
Raleigh, N.C. 27609

A Barnacle Goose (*Branta leucopsis*) was present in South Carolina during the winter of 1980-1981 at Santee National Wildlife Refuge on Lake Marion. It was first observed by refuge personnel on 7 November, by Gardner Miller and Perry Nugent on 22 November, and by other birders at least through 22 January.

Several members of the Zoology Department at Clemson University (Sidney Gauthreaux, Carl Helms, Anna Ross, and I) traveled to the refuge on 22 January and saw the Barnacle Goose in a large flock of Canada Geese (*B. canadensis*). Unfortunately, the geese were several hundred yards away from the nature trail and observation platforms, and "no trespassing" signs prevented us from approaching the flock for closer viewing. Nonetheless, we obtained good looks of the Barnacle Goose as it fed with the Canadas in a grain field adjacent to Lake Marion. The Barnacle was noticeably smaller and shorter-necked than the Canadas. The large amount of white on the face, encircling the eye, was clearly seen. An excellent mark was the great extent of black on the underparts, ranging down the neck onto the breast. The black color on the neck of the Canadas stops at the base of the neck.

This appears to be the first record of the Barnacle Goose for South Carolina. There are numerous records for North Carolina; yet the North Carolina Records Committee placed the species on its Provisional II list, as opposed to its Official List (Chat 44:59-61). The committee stated: "occurrence well documented but birds possibly escaped from captivity" (p. 59). Barnacle Geese are kept as captives by a number of waterfowl breeders and zoos; thus, there is a possibility that the bird seen at Santee could have escaped. However, the goose seemed in good health, was wary (as it flushed and flew freely when the entire flock of Canadas was disturbed and took flight), showed no signs of captivity (such as leg bands), and appeared at an appropriate season (winter) in prime goose habitat. As a result, the origin of the bird, and the validity of the record, are both open to question.

Observations on the Singing of a Chuck-will's-widow

PETE LAURIE
750 Copperhead Trail
Johns Island, S.C. 29455

On 2 June 1983 at 0245 a Chuck-will's-widow began to call in my yard on Johns Island, Charleston County, S.C. The bird sang continuously until 0419. I counted 2616 calls. Every 25 to 100 calls the bird would pause for perhaps 2 to 3 seconds before continuing. On average the bird sang about 27 times per minute.

When the bird ceased calling, it flew much closer and in a matter of seconds began to call again. After calling continuously for 11 minutes at this new location, it moved

farther away, called for 4 minutes, then moved much farther away where it was so difficult to hear that I ceased observations.

On 15 June 1983 I heard a Chuck-will's-widow (probably the same bird as above) begin to call at 1800. It called continuously for 15 minutes at an average rate of 25 calls per minute. The weather was hot, clear, and sunny.

The rate of calling that I noted does not differ from that reported by other workers. For example, Sprunt and Chamberlain (South Carolina Bird Life, 1949, p. 317) say that 25 calls per minute is usual. However, it appears that the length of the singing bout I report here is unusual. Sprunt and Chamberlain (op. cit.) cite A. Sprunt Jr.'s count on 2 June 1939 of 834 consecutive calls as a "remarkable number." This is only about a third the number emitted by the individual whose songs I recorded 44 years later.

First South Carolina Specimen of the Black-throated Gray Warbler

FREDERICK H. HORLBECK

ELEANOR HORLBECK

Wampee Plantation, Wadmalaw Island, S.C.

WILLIAM POST

The Charleston Museum, Charleston, S.C.

The Black-throated Gray Warbler (*Dendroica nigrescens*) was first reported in South Carolina on 13 December 1941, when A. Sprunt Jr. saw an individual on Bull's Island (South Carolina Bird Life, 1949, p. 456). The species has been seen only once in North Carolina, at Orton Plantation, near Wilmington, by Maurice Barnhill and James Parnell (Chat 30:24).

On 29 March 1972 the Horlbecks collected the first specimen for South Carolina. They picked up the individual under a window of a house on Wampee Plantation, Wadmalaw Island, Charleston County. The habitat is an open woodland of mixed hardwood/pine forest, near the edge of a brackish marsh on Church Creek.

With this record, the Black-throated Gray Warbler may now be placed on the definitive South Carolina list. The account of its sighting that was published in *South Carolina Bird Life* (1949) implies that several people saw the 1941 bird. However, E.B. Chamberlain (pers. comm.) states that only Sprunt saw the bird. Therefore, the species should not have been placed on the definitive list of birds recorded in South Carolina, but rather placed on the hypothetical (=Provisional II) list.

The specimen is a female, and is now in the collection of the U.S. National Museum (USNM No. 565257). Our identification was confirmed by Roxie C. Laybourne. Data on the specimen label are: ovaries 3 x 2 mm; fat: trace; skull ossified; molt: above eye, on throat and cheek; stomach empty; legs brownish black; bill: black with little brownish tinge and darker towards tip. A photograph of the living bird from which the skin was made is on file at the Charleston Museum. (CM 1983.167).

We thank Mrs. Laybourne for her help, and we also appreciate Margaret T. Donald's effort in preparing the skin.

Cedar Waxwing Breeds in South Carolina

DOUGLAS B. McNAIR

SIDNEY A. GAUTHREAUX JR.

Department of Biological Sciences

Clemson University, Clemson, S.C. 29631

On 2 June 1981, Sidney Gauthreaux saw Cedar Waxwings (*Bombycilla cedrorum*) carrying grasses and building a nest in one of several planted Sugar Maples (*Acer saccharum*) at the Oconee Nuclear Station's Visitor Center in Oconee County, S.C. He found two nests, which were about 5 m above ground and 1 m apart. One nest was already finished and the other was nearly completed. Both members of a pair helped in the construction. In all, four adults were seen (Gauthreaux 1982). On 5 June, a bird was found sitting on one of the nests, and the other nest appeared abandoned.

At a second locality McNair observed three adult Cedar Waxwings at Holder's Landing, 4 km north of Newry, Oconee County, during June of 1983. On 29 June, he found an adult on a nest. The nest was on a horizontal branch of a Short-leaf Pine (*Pinus echinata*) 2.5 m out from the trunk and 11 m above ground. The nest tree was among other pines located along the water's edge of a narrow channel of Lake Hartwell in a residential area with other scattered trees. McNair saw another adult bring food to the adult on the nest, but was unable to determine if the latter adult was incubating eggs or brooding young. On 22 July, McNair observed in the same group of pines three adults beginning to molt, but did not see any fledged young. The nest was no longer active, and the nesting attempt apparently had failed. On 26 July, Stanlee Miller and McNair collected the nest (Clemson Univ. Dept. Biol. Sci. Coll. Acc. No. 472).

This note provides documentation for the first and second breeding sites in South Carolina, both of which are in the upper piedmont. There are but three prior June reports, as late as 26 June, suggestive of breeding in South Carolina: Caesar's Head, Greenville County, and Mt. Pinnacle and Table Rock State Park, Pickens County (Sprunt and Chamberlain 1970). Potter et al. (1980) and Hamel et al. (1982) state the Cedar Waxwing is an uncommon to fairly common breeder in the mountains and a rare and erratic nester in the piedmont of North Carolina. Breeding in contiguous areas of South Carolina is not unexpected and is probably more frequent than recorded because of inadequate coverage of suitable habitat during the breeding season (mid-May to early August).

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BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1983 unless otherwise indicated)

COMMON LOON: Two were noted on Lake Gaston, N.C., on 1 June by Merrill Lynch, Harry LeGrand, and Karen Masson. Unusual for the mountains in summer was another seen on 4 July at Camp Rockmont in Buncombe County, N.C., by Robert Ruiz.

PIED-BILLED GREBE: One was observed at Fayetteville, N.C., on 25 July by Philip Crutchfield, who also saw five adults with immatures at impoundments at Pamlico Point, Pamlico County, N.C., on 30 and 31 July.

PELAGIC TRIPS OFF SOUTH CAROLINA: Dennis Forsythe conducted pelagic trips out of Charleston, to a distance of 60 miles offshore, on 4, 16, 24, and 31 July. He noted 2 to 10 Cory's Shearwaters on all trips but 24 July, a Greater Shearwater on 4 July, 2 to 8 Audubon's Shearwaters on each trip, and 3 to 10 Wilson's Storm-Petrels on each trip. Chris Haney spent the period from 11 to 15 July on a boat near the Continental Shelf in Georgia waters. During this period he recorded 13 Cory's Shearwaters, 2 Audubon's Shearwaters, and 17 Bridled Terns in adjacent South Carolina waters.

GREATER SHEARWATER: John Fussell observed one from shore at Atlantic Beach, N.C., on 12 June, and he found a dead bird at nearby Cape Lookout on 30 June.

AUDUBON'S SHEARWATER: Along the North Carolina coast, one was seen 30 yards from shore at Hatteras on 23 July (Paul Clyne), one was noted inside Beaufort Inlet on 15 July (John Fussell), and 11 were seen on a boat cruise along the coast between Beaufort Inlet and Cape Lookout on 16 July (Bob Holmes, Larry Crawford).

LEACH'S STORM-PETREL: Always a good find, two were seen approximately 43 miles SSE of Beaufort Inlet, N.C., on 18 June, as noted by Wayne Irvin.

TROPICBIRD (SP.?): In Carteret County, N.C., an adult was observed perched on a post at Cape Lookout on 16 June (Ginger Eisenman) and one was seen flying over the bridge from Atlantic Beach to Morehead City on 27 July (Larry Crawford).

DOUBLE-CRESTED CORMORANT: This species is increasing at all seasons on inland lakes, particularly in summer. At Jordan Lake, near Chapel Hill, N.C., cormorants were seen all summer, with a peak of 22 on 2 July (Chapel Hill Bird Club). Merrill Lynch and Harry LeGrand saw 12 on 1 June at Roanoke Rapids Lake, N.C.; one was seen by Philip Crutchfield at Forest Lake near Fayetteville, N.C., on 15 and 22 June; and one was noted by Tom Howard at Falls Lake in northern Wake County, N.C., on 21 July.

ANHINGA: At a site where nesting may be occurring, a female was seen at Jessup's Mill Pond near Fayetteville on 21 June (Philip Crutchfield, Jarvis Hudson). Crutchfield also saw five on 17 July at Sunset Beach, N.C., where the birds probably were just postbreeding visitors.

MAGNIFICENT FRIGATEBIRD: The only report for the summer was an individual seen by Harry Freeman and party at Mount Pleasant, S.C., on 31 May.

HERON ROOST: Unusual for the piedmont was the presence of a large heron roost, as reported by Tom Howard at Lick Creek on Falls Lake, N.C. The roost was present from mid-July to late August, with the following peak counts (generally in early August): 125 Great Egrets, 100 immature and 4 adult Little Blue Herons, 40 Great Blue Herons, 25 Green-backed Herons, 6 immature White Ibises, and 2 adult Tricolored Herons.

LITTLE BLUE HERON: An adult was notable on 11 July at Merchant's Mill Pond State Park, N.C., as seen by Frank Enders.

CATTLE EGRET: Uncommon for inland North Carolina were six in northeastern Beaufort County and three in eastern Martin County on 2 June (Merrill Lynch et al.); two at Raleigh on 6 June (Wayne Irvin); one at Jordan Lake on 7 July (Bill and Margaret Wagner); and three at Fayetteville on 23 July (Philip Crutchfield).

SNOWY EGRET: In late July, at least two individuals were found at each of several sites: in South Carolina near Townville (Sid Gauthreaux, Anna Ross); and in North Carolina at Fayetteville (Philip Crutchfield), Falls Lake (Ricky Davis), and Jordan Lake (Davis).

TRICOLORED HERON: Three was an excellent inland count at Jordan Lake, as noted by Bill and Margaret Wagner on 28 July. Two were also seen by Sid Gauthreaux, Paul Hamel, and others on 7 August near Townville, S.C.

BLACK-CROWNED NIGHT-HERON: Quite unusual was an immature seen at Clemson, S.C., on 29 July by Douglas McNair. The heron was feeding at midnight on cockroaches on a sidewalk at Clemson University.

YELLOW-CROWNED NIGHT-HERON: As many as two were seen at a pond at Winthrop College in Rock Hill, S.C., this spring (Albert Conway et al.). Well inland in North Carolina, though not suggestive of breeding, were singles at Winston-Salem on 9 July (Elizabeth Conrad et al.), in central Halifax County on 12 July (Frank Enders), and at Jordan Lake on 31 July (Ricky Davis). Two were observed on 4 July at Falls Lake, near Durham, by Jim McConnell and Mike Schultz.

LEAST BITTERN: Jim McConnell noted three on 4 July on Little Lick Creek at Falls Lake, approximately 2 miles E of where they were seen last year.

AMERICAN BITTERN: This species is very poorly known as a breeder in eastern North Carolina. Four seen or heard at Lake Mattamuskeet by Allen Bryan on 3 June suggest a breeding population at that locality.

GLOSSY IBIS: Rare inland were as many as three seen at Jordan Lake during July and August by Bill Wagner and others. Eleven were seen at a pond near Fayetteville on 1 July by Bob McMillan.

WHITE IBIS: Adults are seldom seen in the piedmont; thus, surprising were 14 to 15 adults seen flying in a line at Charlotte, N.C., on 14 July by Harriet Whitsett.

TUNDRA SWAN: Allen Bryan observed an out-of-season swan at Lake Mattamuskeet on 29 July.

- RING-NECKED DUCK:** Rare for midsummer were individuals seen at Pea Island, N.C., on 24 July (Paul Clyne) and near Raleigh on 31 July (Ricky Davis).
- LESSER SCAUP:** A female was observed at Lake Mattamuskeet on 4 June by Allen Bryan, and Philip Crutchfield noted a male at a pond in Sunset Beach, N.C., on 17 July.
- SURF SCOTER:** This species is very rarely seen in summer. Therefore, unusual was a first-year male seen by Skip Prange at Harkers Island, N.C., on 18 July.
- BLACK VULTURE:** Notable for the mountains was one found by Harry LeGrand in northern Alleghany County, N.C., on 14 June.
- SWALLOW-TAILED KITE:** North of the breeding range was one seen by Ben Warren (fide Bob Holmes), near New Bern, N.C., on 3 July.
- MISSISSIPPI KITE:** For a North Carolina record, 36 birds, all apparently adults, were observed at the eastern tip of Halifax County on 3 June by Merrill Lynch, Harry LeGrand, and Karen Masson.
- SHARP-SHINNED HAWK:** An immature was observed by Harry LeGrand in southeastern Durham County, N.C., on 18 June, and Wayne Irvin saw one, perhaps an early migrant, in Lenoir County, N.C., on 9 July.
- COOPER'S HAWK:** Rare during the breeding season in central North Carolina were individuals near Ringwood in Halifax County on 19 June and 5 July (Merrill Lynch), in northern Wake County on 25 June (Harry LeGrand), and near Southern Pines on 7 July (Jay Carter).
- BROAD-WINGED HAWK:** John Cely noted a pair on 10 June at Sandhills State Forest in Chesterfield County, S.C., near the edge of the breeding range.
- BALD EAGLE:** Quite unexpected was the successful nesting of a pair during the winter and spring on the Broad River in Newberry County, S.C., according to John Cely. One young was fledged. A few nonbreeding individuals were seen inland in North Carolina this summer at Roanoke Rapids Lake, Falls Lake, the Pee Dee River, and Jordan Lake (where five were seen from 23 to 31 July, fide Bill Wagner).
- NORTHERN HARRIER:** John Fussell saw four or five this summer in coastal Carteret County, N.C., during June and July, but he considered them probable nonbreeders. A female was observed by Harry LeGrand, Merrill Lynch, and Karen Masson in northeastern Beaufort County, N.C., on 2 June; and an adult male was seen on 20 July in western Fort Bragg, N.C., by Jay Carter.
- OSPREY:** A pair was seen at Falls Lake in early summer (until 15 July), but Tom Howard found no evidence of nesting. Single birds were also of interest at Clemson on 11 June (Douglas McNair) and at Jordan Lake on 2 July (Anson Cooke et al.).
- PEREGRINE FALCON:** Rare in summer was an individual seen at Morehead City, N.C., on 12 June by Wayne and Fran Irvin, and presumably the same bird in that general area on 24 July (Wayne Irvin). [I suspect that the bird was one raised through the Cornell University hacking project.—HEL]
- AMERICAN KESTREL:** Ricky Davis noted two adults, and an apparent immature

begging for food in flight, on 19 June at the Oxford-Henderson Airport in eastern Granville County, N.C. Jay Carter found two excited adults in western Fort Bragg on 5 July, at the same site where breeding occurred last year; and Dick Brown reported birds nesting in downtown Charlotte and a nest with two young in Iredell County, N.C. There were also June sightings for Halifax County (Merrill Lynch), Greensboro, N.C. (Harry LeGrand), and Raleigh (LeGrand).

KING RAIL: Perhaps indicative of breeding were two heard and seen at Falls Lake, near Durham, by Ricky Davis on 23 July.

AMERICAN COOT: Out of season was a coot observed by Ricky Davis at Jordan Lake on 25 June.

BLACK-NECKED STILT: A new nesting site for North Carolina was found at Brant Island in Fort Macon State Park. John Fussell discovered a nest with four eggs on 13 June, but the nest later failed.

AMERICAN AVOCET: Thirty were counted by James Clark at a spoil pond in southern Beaufort County, S.C., adjacent to the Savannah River, on 31 July. John Fussell noted one at an impoundment at Davis, N.C., on 17 July, and three were there on 31 July.

PIPING PLOVER: A southern extension of the breeding range was documented when Philip Crutchfield observed seven birds, including a pair with a chick, at Sunset Beach, N.C., on 17 July. Rare inland was an individual at Lake Mattamuskeet on 29 July (Allen Bryan).

BLACK-BELLIED PLOVER: Harry LeGrand and Merrill Lynch saw two in breeding plumage at Lake Gaston on 1 June; whereas Ricky Davis noted one in partial breeding plumage at Jordan Lake on 31 July.

MARbled GODWIT: Rare for June were six at Portsmouth Island, N.C., on the 18th (John Fussell), and Fussell had 15 there on 22 July.

WHIMBREL: Seldom seen inland, a flock of 20 seen circling overhead on 3 June by Frank Enders was notable in central Halifax County, N.C. Also rare was one seen by Ricky Davis at Falls Lake on 30 July.

LONG-BILLED CURLEW: Apparently regular in fall at Portsmouth Island, three were seen on 22 July and two on 23 July by John Fussell.

LESSER YELLOWLEGS: A late spring migrant was seen by Allen Bryan on 4 June at Lake Mattamuskeet.

SPOTTED SANDPIPER: One was seen by Merrill Lynch and Harry LeGrand at Lake Gaston on 1 June.

RUDDY TURNSTONE: Scarce inland was an individual observed by Ricky Davis at Raleigh on 31 July.

WILSON'S PHALAROPE: Individuals were sighted at Portsmouth Island on 25 July (John Fussell, Fred Patton) and at Raleigh on 31 July (Ricky Davis), in addition to four at Fort Macon State Park on 29 July (Fussell, Derb Carter).

AMERICAN WOODCOCK: One was seen on 19 June by Rick Knight at Carver's Gap, along the North Carolina-Tennessee border just east of Roan Mountain. The species occurs regularly in the spruce-fir zone, especially in grassy spots, in North Carolina.

SHORT-BILLED DOWITCHER: A good inland count was ten, as reported by Ricky Davis at Falls Lake on 30 July.

LONG-BILLED DOWITCHER: Bill Hilton observed two fairly early individuals in breeding plumage at Huntington Beach State Park, S.C., from 12 to 15 July.

RED KNOT: Good summer counts, both at Portsmouth Island, were 105 on 17 June and 188 on 22 July (John Fussell).

SANDERLING: John Fussell counted 1943 along a 17-mile stretch of beach on Portsmouth Island and Core Banks on 24 July.

WHITE-RUMPED SANDPIPER: A good inland count for autumn was four seen by Ricky Davis at Falls Lake on 30 July.

BAIRD'S SANDPIPER: The only report for the summer season was an individual seen by Sid Gauthreaux and party near Clemson on 31 July.

STILT SANDPIPER: Excellent counts of this rather uncommon migrant were 155 at Pea and Bodie Islands on 28 July (Allen Bryan), 80 at Davis, N.C., on 31 July (John Fussell, Brainard Palmer-Ball), and 11 at Lake Mattamuskeet on 29 July (Bryan).

RUFF: Very rare for North Carolina, though being seen with increasing frequency in recent years, was a Ruff found by John Fussell at an impoundment at Davis on 17 July.

CURLEW SANDPIPER: John Fussell saw two individuals in nearly full breeding plumage at Portsmouth Island on 23 July. One had been seen on the previous day.

POMARINE JAEGER: Seldom seen "on land" was an individual resting on the shore of Bogue Sound at Morehead City on 5 June (John Fussell).

SKUA (SP.?): Wayne and Fran Irvin noted one approximately 40 miles SE of Beaufort Inlet, N.C., on 13 June. The plumage was uniform medium brown. [Skuas seen off the Carolina coast in the summer are likely to be South Polar Skuas. However, because skuas are rare in our area, because the identification of the two species in the North Atlantic (South Polar and Great) is difficult, and because the seasonal distribution of them is still uncertain, observers should provide as many details as possible on the plumages of birds seen in the Carolinas.—HEL]

HERRING GULL: Apparently the first nesting by the species on a barrier island in North Carolina occurred at Portsmouth Island in late June. John Fussell found two nests with eggs, and he saw a large, flightless bird with adults there in late July.

BONAPARTE'S GULL: An adult was seen all summer at Brant Island at Fort Macon State Park by John Fussell.

GULL-BILLED TERN: Presumably postbreeding visitors were seven noted by Allen Bryan at Lake Mattamuskeet on 29 July.

FORSTER'S TERN: Somewhat early were two migrants seen by Ricky Davis at Falls Lake on 30 July.

COMMON TERN: Ricky Davis saw one at Falls Lake on 3 July, and Dan Cohan and Tim Stewart noted three at Lake Hartwell, S.C., on 21 July.

ROSEATE TERN: Excellent finds were one at Cape Lookout, N.C., on 30 June and

two there on 1 July, as seen by John Fussell et al. The birds were in full breeding plumage, but no evidence of nesting was found.

SOOTY TERN: Wayne Irvin observed four approximately 30 miles S of Beaufort Inlet, N.C., on 18 June.

BRIDLED TERN: From one to three were noted by Dennis Forsythe on three pelagic trips off Charleston in July.

CASPIAN TERN: At Lake Mattamuskeet, Allen Bryan noted two on 3 and 4 June and six (including four young birds) in late July. Two were at Jordan Lake on 25 June and again on 31 July (Ricky Davis), and two were also at nearby Falls Lake on 4 July (Jim McConnell).

BLACK-BILLED CUCKOO: Unusual was one heard calling near Jordan Lake by Bill and Margaret Wagner on 4 July. Another was seen in a hedgerow 5 miles E of Whitakers in northern Edgecombe County, N.C., on 3 June (Harry LeGrand, Merrill Lynch).

COMMON BARN-OWL: One, apparently a nesting bird, was seen on several occasions in June and July at Jordan Lake by members of the Chapel Hill Bird Club. Rare for Carteret County, N.C., in summer was another seen by John Fussell and party at Portsmouth village on 19 June.

WHIP-POOR-WILL: Near the edge of the breeding range were three heard by Philip Crutchfield at Fayetteville on 23 July.

RED-COCKADED WOODPECKER: On 25 May, Merrill Lynch and Julie Moore found adults feeding young at a nest 5 miles E of Columbia, N.C., and at two nests on the southern part of mainland Dare County, N.C.

WESTERN KINGBIRD: Extremely rare for early spring were two studied well at Kings Mountain State Park, S.C., on 28 March by Bill Hilton and party. The full details include the yellow underparts and the black tail with white outer tail feathers.

SCISSOR-TAILED FLYCATCHER: A pair again nested in northern Laurens County, S.C., as reported by John Cely. An adult was seen on the nest on 17 May; the nest was in a walnut tree in a yard, less than 0.25 mile from last year's site.

WILLOW FLYCATCHER: Ramona Snavelly noted four birds, including two singing on territory, along Salem Creek in Winston-Salem, N.C., on 8 June and later dates. Willows have occurred along this creek for several summers.

ALDER FLYCATCHER: This species is rapidly undergoing a breeding range expansion in the higher elevations of the North Carolina mountains. In addition to several found, as expected, at Roan Mountain in Mitchell County by Rick Knight, a record state count of eight singing males plus another pair was made by Douglas McNair on 20 June at an established site in Shining Rock Wilderness Area in southern Haywood County. McNair also discovered a new summer station when he found two singing males at 6500 feet on the southeastern side of Balsam Cone Mountain, 2.5 miles N of Mount Mitchell, Yancey County, on 26 June. The habitat at the last site consisted of spruce, fir, and deciduous saplings, but blackberries were absent.

HORNED LARK: Rick Knight found an adult and a juvenile on Round Bald, just east of Roan Mountain, on 21 June. Near the eastern edge of the breeding range in North Carolina were two males in northern Edgecombe County on 3 June (Harry LeGrand, Merrill Lynch), a pair at Darlington in central Halifax County on many dates from April to July (Frank Enders), and a pair in the latter county just southeast of Glenview in May and June (Lynch, Karen Masson).

BANK SWALLOW: A very early migrant was observed by John Fussell at Cape Lookout, N.C., on 2 July.

CLIFF SWALLOW: Nesting again occurred under one or two bridges at Jordan Lake, fide Bill Wagner. Merrill Lynch counted 67 active nests on 1 June at bridges over Lake Gaston, and Douglas McNair noted eight pairs breeding at the NC 109 bridge along the Anson-Richmond County line, N.C., in mid-May.

COMMON RAVEN: A pair seen by Douglas McNair at Table Rock mountain, Pickens County, S.C., on 19 and 20 March was showing courtship behavior and defending a ledge. However, the birds did not nest there, according to McNair. The species has not been known to nest in the state for several decades.

FISH CROW: P.R. Ford saw and heard one at High Point, N.C., on 10 July. In South Carolina, Paul Hamel noted a few at Lake Keowee, in Newry, during the summer, as did Albert Conway at Rock Hill and Catawba. These localities are near the inland edge of the species' range.

HOUSE WREN: Very notable for the western coastal plain in summer were three singing birds at Enfield, N.C., on 19 June (Merrill Lynch) and several at Fayetteville all summer, including singing males (Philip Crutchfield, Henry Rankin).

SEDGE WREN: For the second consecutive year, Philip Crutchfield and party noted large numbers of this species in Pamlico County, N.C. On 29 July, they heard 20+ singing in marshes at Pamlico Point, and they had 25+ singing in the James Creek and Oyster Creek area of the county on 30 July. The species is not known to breed in the Carolinas. More field work in these and other marshes in tidewater North Carolina is badly needed to clarify the species' status, as late-summer singing by Sedge Wrens is not necessarily indicative of breeding.

AMERICAN ROBIN: Tom Reeves reported on a rare nesting by robins at Charleston, noting two adults and three juveniles in a yard on 5 July.

HERMIT THRUSH: This species is extending its summer range into the mountains of North Carolina. On Roan Mountain, where one was found in June several years ago, Lance Peacock heard one singing on 16 June, and Rick Knight had one to three singing birds from 10 June to 8 July (though only one was on the North Carolina side of the mountain). A major range extension was detected by Douglas McNair. He found three, and maybe four, singing birds at 6400+ feet on Mount Mitchell on 26 June. Though nesting may well be occurring, no definite evidence of breeding (other than territorial males) has yet been reported.

CEDAR WAXWING: In North Carolina (outside of the known breeding range) were three at Lake Gaston on 1 June (Harry LeGrand, Merrill Lynch), one in central Carteret County on 5 June (John Fussell), and four at South Mountains State Park on 8 June (Paul Hart). Ricky Davis noted an early migrant at Jordan Lake on 31 July.

SOLITARY VIREO: Paul Hart had three singing males at South Mountains State Park on 8 June. Harry LeGrand observed adults feeding juveniles at two places in Umstead State Park, near Raleigh, in May and June; these vireos continue to be fairly common in summer at the park.

WARBLING VIREO: One on territory during the spring at Camp Rockmont, near Swannanoa, N.C., was found again on 15 June by Robert Ruiz; however, no conclusive evidence of breeding was observed. A new breeding season site of the species was noted by Harry LeGrand, who saw two singing birds along the New River a few miles north of Sparta, N.C., on 14 June.

BLACK-AND-WHITE WARBLER: This species is quite rare during the breeding season in the eastern piedmont of North Carolina. Therefore, a good count was three singing birds in eastern Warren County on 1 June (Merrill Lynch, Harry LeGrand). Three were found at Hall Swamp in Martin and Beaufort Counties, in the North Carolina coastal plain, on 28 May and 2 June by Lynch.

SWAINSON'S WARBLER: Though within the breeding range, individuals were uncommon on 5 June along Bawdy Creek in Johnston County, N.C. (Harry LeGrand), and on 21 June near Fayetteville (Philip Crutchfield, Jarvis Hudson).

WORM-EATING WARBLER: In the North Carolina coastal plain, six singing birds were heard by Merrill Lynch on the Jamesville Breeding Bird Survey on 28 May, and he had seven birds in Hall Swamp (Martin and Beaufort Counties) on 2 June. Allen Bryan heard another at Lake Mattamuskeet on 4 June. The species was also noted in that state's piedmont in Uwharrie National Forest during June (Jay and Lois Garner, Stanley Alford). Several were also at Crowders Mountain State Park, N.C., from April to June, including an agitated pair on 12 June (Paul Hart).

BLUE-WINGED WARBLER: One of the very few summer records for South Carolina was a bird found singing by Douglas McNair on 17 June. It was in shrubs along a stream at Mountain Rest, Oconee County, at an elevation of 1750 feet.

YELLOW WARBLER: Rare for the northeastern piedmont were singing birds found by Merrill Lynch and others at Lake Gaston on 1 June and near Tillery (in Halifax County) on 19 June.

CERULEAN WARBLER: Dick Brown and Joey Cochran had three or four singing males at Chimney Rock Park, N.C., on 1 June, and Cochran heard the birds there through June. Brown, along with Bob Kluttz, saw and heard a male at the Blue Ridge Assembly at Black Mountain, N.C., in late June. Though a number of new breeding-season stations have been found in the North Carolina mountains in recent years, many gaps in the range, either real or apparent, are still present.

SCARLET TANAGER: Notable for the Sandhills was a male seen and heard on 27 June at Weymouth Woods preserve, Southern Pines, N.C., by Jarvis Hudson.

HOUSE FINCH: There were several reports this summer from Asheville and vicinity (Buncombe County), fide Robert Ruiz; nesting is probably occurring there. Frank Enders found a nest, plus three adults, in downtown Roanoke Rapids, N.C., from April to June. House Finches were noted by Carr Speight feeding young in his yard in Rocky Mount, N.C., from 4 to 8 July. Philip Crutchfield and Henry Rankin reported as many as 12 birds at one place in Fayetteville this summer, and five at another.

- AMERICAN GOLDFINCH:** This species was noted in increased numbers in many areas of the piedmont and upper coastal plain of North Carolina during the summer, including 12+ seen by Philip Crutchfield and party in northeastern Fort Bragg on 23 July.
- RED CROSSBILL:** Douglas McNair observed a flock of nine adults, including a pair undergoing courtship activities, 1 or 2 miles E of Richland Balsam (Jackson-Haywood County line), N.C., on 20 June.
- GRASSHOPPER SPARROW:** A good count for the mountain region was 14, noted singing by Harry LeGrand in eastern Alleghany County, N.C., on 14 June. Rick Knight found another in the mountains at Bakersville, N.C., on 15 June. Rare for Fayetteville were three probable breeders on 23 July, seen by Philip Crutchfield.
- LARK SPARROW:** Lark Sparrows bred near Derby, Richmond County, N.C., in 1981, but there were no reports of the birds last summer. However, in 1983 Douglas McNair found single (nonsinging) birds at two sites near Derby on 17 and 18 May; whereas Ricky Davis had a singing male, apparently on territory, on 25 June at the same site. Thus, breeding may have occurred again this summer.
- BACHMAN'S SPARROW:** This species is apparently absent from the northern coastal plain of North Carolina as a breeder; thus, of note was a singing bird 1.5 miles SE of Glenview in Halifax County on 31 May (Merrill Lynch, Harry LeGrand). The bird was still present in mid-June (Allen Bryan). The habitat consisted of a clump of saplings within a large weedy field.
- DARK-EYED JUNCO:** One of the few breeding-season records for South Carolina was an individual observed singing from 18 to 20 June at Caesar's Head (elevation 3000 feet) by Douglas McNair.
- LAPLAND LONGSPUR:** Perhaps a record count for North Carolina was the 30 to 33 longspurs seen by Douglas McNair at the Laurinburg-Maxton airfield on 22 December 1982. [This species is certainly not as scarce in the Carolinas as the literature indicates. Inland birders should look for Laplands where flocks of Horned Larks occur. The above birds were seen in a flock of 100 larks. Such flocks are generally found in extensive plowed fields, as well as at airports. Along the coast, where the larks are quite rare, look for longspurs in short-grass habitats and in dunes.—HEL]

Newspaper Gleanings

In Duncan, British Columbia, a nighthawk with a broken wing was unable to migrate to South America. It took 4 days of diplomacy to get around the laws covering transportation of migratory birds, but the bird was taken aboard an airplane as carry-on luggage.

In Nantucket, a Western Reef Heron (which resembles a Little Blue) was spotted last spring. Experts decided this bird had not escaped from a zoo, and bird watchers came from far and near. Daphne Gemmill wrote in the *Plain Dealer* that she traveled 1000 miles in 3 days, just to see the bird. This writer is hearing reports that the 600 Club is passe. "Many observers have seen 700 species in North America," he has been told.—LCF

BOOK REVIEW

THE COUNTRY JOURNAL BOOK OF BIRDING AND BIRD ATTRACTION

Alan Pistorius. 1981. W.W. Norton & Co., Inc. Illus. by Don Almquist. 274 p. Index. \$15.95.

The growing interest in birding across our land these past few years has not only given rise to a booming business for the makers of binoculars, scopes, birdseed, feeders and birdhouses, but also to the publication of numerous books, magazine articles and news stories on the many facets of birding. This is one such book, for the novice and advanced birder, alike.

The author, Alan Pistorius has a Ph.D. in English Literature from, and has taught field ornithology courses at, the University of California in Berkeley. He now lives in Vermont and has written numerous articles in such journals as *Natural History*, *International Council for Bird Preservation Newsletter*, *Country Journal* and *Raptor Research*. His style is quite readable, with bits of humor throughout. He appears to be an accomplished birder, knowledgeable about his subjects. He frequently shares information garnered from technical literature (well footnoted) in a way those of us without scientific background and training can comprehend. The illustrations are well-done pen-and-ink drawings, mostly action sketches, not intended to be field-guide quality.

The purpose of the book, as stated in the introduction, is to "chronicle and examine the major birding activities through a year in the life of a 'working' birder." He calls it a "home and away" book, with some chapters devoted to a basic bird-attraction "manual"; others, to major field birding events of the year from an inside point of view.

There is, in the "home" chapters much interesting and useful information relative to attracting birds, the value of which to the reader depends upon one's own experience and reading. Pistorius devotes a chapter to winter feeding, in which he explores the myriad of commercial and home prepared foods, their nutritional value and cost. He goes into the pros and cons of feeding at all, dispelling some popular myths against feeding such as one which says that out-of-season food sources will foul up migratory instincts. Another chapter describes types of feeders, how they should be located, jay and squirrel proofing. An example of his humor is seen in the discussion on the advantages of scattering seed on the ground. He relates, "A document I have before me claims that evening grosbeaks 'prefer to feed four or five feet—or more—above the ground,' but a food-preference chart on the adjacent page indicates that grosbeaks prefer to feed on the ground.' Both of course, are right. Where grosbeaks prefer to feed is at the exact level of the local sunflower supply—whether on the ground, five feet up in a feeder, or thirty-five feet up on the top of a telephone pole."

To this reviewer, the most interesting chapters are on Migration, the Christmas Count and Big Day Doings.

On migration, Pistorius points out early concepts on the subject, traces the history of knowledge acquired by observers, and summarizes the more recent scientific studies of bird navigation, orientation and the like. Perhaps the most novel idea is that we need to re-examine the cherished and commonly held notion that our country is divided into

four distinct and separate flyways. He suggests that this concept is now coming under fire as a result of recent investigations. He also introduces a newly discovered route or flyway that extends out into the Atlantic Ocean, which he terms the "Sargasso Sea Loop"—a route taken, for instance, by Blackpoll Warblers in the fall.

There are several pages devoted to hawk migration and astounding numbers, especially of Broad-winged, seen at Hawk Mountain in 1978 and Corpus Christi in 1977. He gives instructions for watching nocturnal migrants against a full moon—no way one can identify them, of course, but exciting viewing.

The chapter on the Christmas Count is both interesting and entertaining. Pistorius covers the subject thoroughly from participation in a well-established count to the setting up of a new one. It includes everything from the recruitment of counters, the methods employed, the pre-count stake-outs, the final compilation complete with the grilling of observers on rare finds. He even mentions the "privilege" we counters have in anteing up our two dollars for *American Birds*. His descriptions of counts which he has participated in were amusing, and I believe almost all Carolina Bird Club members can relate to the events therein. He tells of the headaches and worries of the compiler, from recruiting enough good birders to cover the area to getting accurate descriptions of unusual finds and sending the final report to *American Birds*. He mentions the difficulties of counting in bad weather, extremes of temperatures, high winds. Pistorius is a serious birder (aren't we all?), but he has the gift of poking fun at the whole experience, which I found delightful.

In the chapter on the Big Day, he relates a particular experience in Vermont. His story of the trials and tribulations of trying to cover as much territory as possible in less than ideal weather conditions is great. The element of fierce competition between the two groups of birders as to which one could find the most species reminds one of our Spring Counts here in the Carolinas.

The final chapter is called, "Mapping the Birds of Summer," the latest activity for birders. Called Atlasing, it is a field activity that has been going on in Europe for several years. This program undertakes to give a far more accurate picture of the breeding birds in a given area than the Breeding Bird Censuses and Breeding Bird Surveys have done. It is the hope of the instigators of atlasing, or mapping, to cover all of North America. Atlasing has strict rules, regulations and procedures which, if properly followed, should add much information to our present knowledge of expanding and contracting ranges. It could conceivably come up with some surprises. It should be a valuable and concrete tool for conservationists to use in their struggle to preserve choice habitats. Mapping the birds of summer provides additional activity for the bird student wishing for something constructive to do in the months between spring and fall migration.—GTW

Parrot Gives it Away

In Australia, the rare Orange-bellied Parrot lives on Swan Island, where the Secret Intelligence Service runs a training school. When the Service announced plans to build an airfield, the Victoria state government said construction would endanger the parrots—and the secret training base was revealed.



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Carolina Bird Club, Inc., is a non-profit educational and scientific association founded in March 1937 and open to anyone interested in the study and conservation of wildlife, particularly birds. Dues, contributions, and bequests to the club are deductible from state and federal income and estate taxes. Checks should be made payable to Carolina Bird Club, Inc., and sent to CBC Headquarters, P.O. Box 2764, Raleigh, N.C. 27611.

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OFFICERS

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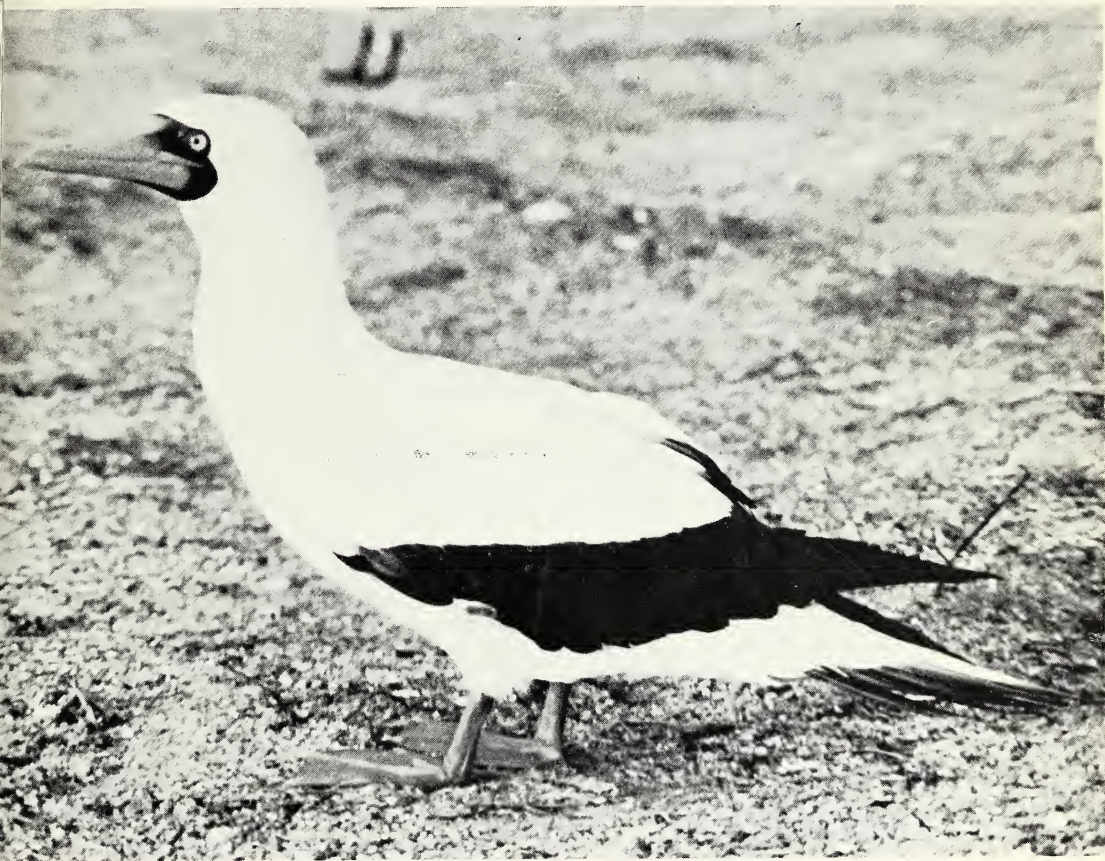
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Editor	Eloise F. Potter, Route 3, Box 114 AA, Zebulon, N.C. 27597
General Field Notes	David S. Lee, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 1505 Brooks Avenue, Raleigh, N.C. 27607
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—James F. Parnell photographed the Masked Booby that spent most of the summer of 1981 in a seabird colony at the mouth of the Cape Fear River near Fort Fisher, N.C.

The Genus *Sula* in the Carolinas: An Overview of the Phenology and Distribution of Gannets and Boobies in the South Atlantic Bight

DAVID S. LEE and J. CHRISTOPHER HANEY

Five of the eight recognized species of the genus *Sula* are known from the southeastern United States. Of these only the Northern Gannet (*Sula bassana*) occurs regularly in the Carolinas, but both the Masked Booby (*S. dactylatra*), formerly Blue-faced, and the Brown Booby (*S. leucogaster*) have been reported from North and South Carolina. Of the two remaining species, the Red-footed Booby (*S. sula*) is generally restricted to the Caribbean and disperses northward into the Florida Keys and Gulf of Mexico, whereas the Blue-footed Booby (*S. nebouxii*) is an eastern Pacific species with one accidental and astonishing record from south Padre Island, Texas (5 October 1976, photograph Amer. Birds 31:349-351).

Generally the records for locally occurring *Sula*, excluding wintering Northern Gannets, are less than adequate as conclusive evidence of seasonal or geographical occurrence. Most problems result from confusing plumages of the various species and the general lack of experience of North American bird students with boobies. An additional problem is the fact that until very recently most ornithologists believed that boobies occurred off the south Atlantic states, outside Florida, only as rare accidentals, causing many records to be viewed with excessive caution and skepticism. Potter et al. (1980), for example, associated all records of boobies in the Carolinas with storms. In recent years few groups of birds have caused as many interpretive problems for the Carolina Bird Club's North Carolina Records Committee as have the *Sula*. Even photographic records are hard to decipher. The number of published summer sight records for Northern Gannets is particularly troublesome because in the past they were accepted without any scrutiny. Subsequent sightings of boobies became suspect because of the "documented" occurrence of summer gannets. Detailed records of any sulids seen in the southeast between late May and early October would be valid and perhaps important contributions to our understanding of the local distribution of this genus. Although all of the species reported from the region are now documented with specimens and photographs, detailed record keeping is still necessary. Much useful information could become masked by assumptions based on season, previous literature, or emphatic statements of unsupported identifications. Because different age groups have characteristic plumages, detailed record keeping will eventually provide us with needed insight on local seasonal population structure.

In many ways the offshore environment of Georgia is similar to that of South Carolina. Because it is reasonable to assume that records for occurrence of at least the tropical sulids in all three states are comparable, we have included some data gathered during recent Georgia offshore surveys as well. These collective records provide a better picture of our local understanding of these birds. For Florida the status of each species is reasonably well documented by a substantial number of records, and we see no need to repeat them at this time.



NORTHERN GANNET

The Northern Gannet occurs commonly as a migrant and winter resident in the Carolinas between late October and mid-April, but a few are encountered outside these dates (Fig. 1 and 2). However, the species is abundant only from late November through early March, and during this season numbers are sometimes phenomenal. J. Fussell, A. Bryan, and R. Davis reported 10,000+ at Cape Hatteras Point (Dare County, N.C.) on 13 February 1982 (Chat 46:82). This single observation represents about 16% of the total western Atlantic breeding stock. Winter counts of 1000 to 3000 birds from single observation points are not uncommon for northeastern North Carolina, but in southeastern North Carolina and South Carolina high counts of only 100 to 200 have been reported. These lower numbers are generally typical of other coastal states in the Southeast. Most Georgia counts have involved fewer than 50 individuals, but during midwinter up to 500 have been observed at one location (Haney, pers. obser.). The Outer Banks of North Carolina seems to represent the southernmost area of regular high concentrations, and from January through March a significant proportion of the adult western Atlantic stock probably occurs along the Outer Banks.

The number of Carolina records from early October and from late May to early June is substantial. Although there are records from outside these periods, all but one (when age has been reported) are of migrating juveniles and subadults. Few summer specimens or photographic records exist, and there is a strong possibility that some—perhaps many—of these records represent other *Sula* species. The dates of occurrence

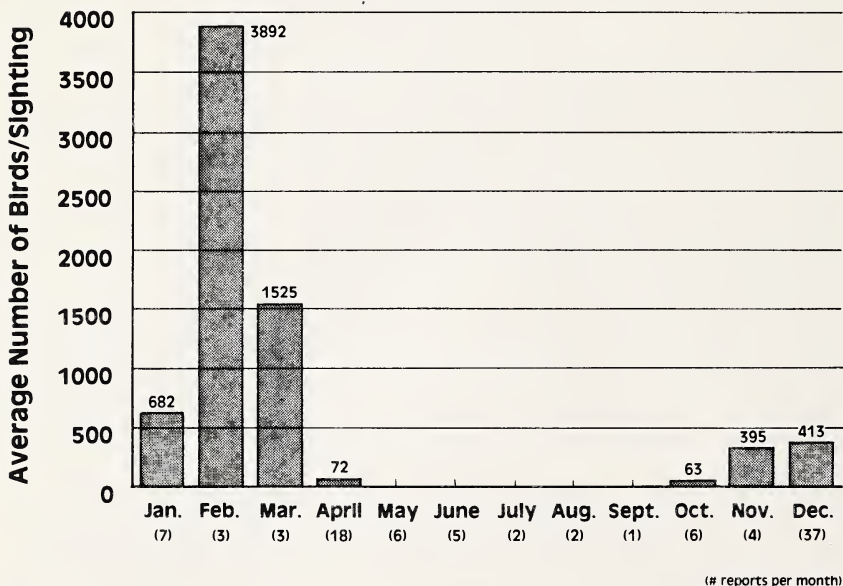


Fig. 1. Seasonal distribution of Northern Gannets in North Carolina. Bars represent average numbers of birds seen per reported sighting (based on 97 sight reports of 39,443 birds).

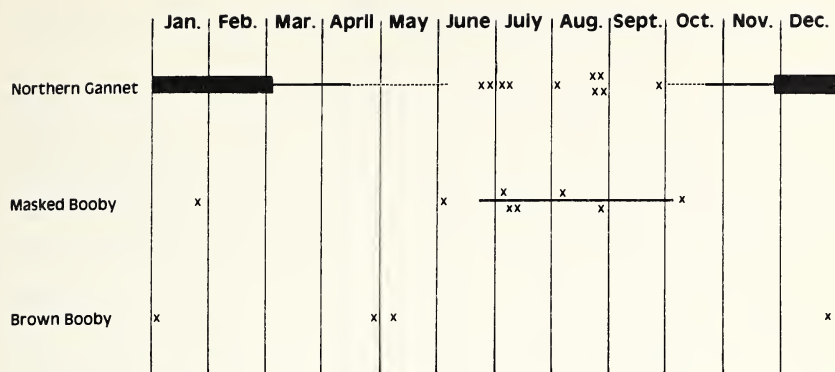


Fig. 2. Documented seasonal distribution of sulids in the Carolinas (based on all sources). Many summer gannet records are not verified.

TABLE 1. Unseasonal records of Northern Gannets in the Carolinas.

<i>Date</i>	<i>State</i>	<i>Location/Age</i>	<i>Source</i>
June 1948	N.C.	New Hanover County; 1 juvenile male	NCSM 2968
24 June ____	S.C.	_____	Clapp et al. 1982
24 June 1973	N.C.	Hatteras Island; 1 immature	AB 27:857, Chat 37:108
28 June ____	N.C.	_____	Clapp et al. 1982
7 July 1950	N.C.	New Hanover County, Masonboro Inlet; 1 adult female	NCSM 2967
9 July 1972	N.C.	Cape Lookout; 1 subadult	Chat 36:111
23 July 1963	N.C.	Shackleford Banks; 1 adult	Wilson Bull. 76:187
19 August 1962	N.C.	New River Inlet; single bird	Chat 26:102
20 August ____	N.C.	_____	Pearson et al. 1959
28 August 1957	N.C.	Long Beach 1 immature	Chat 22:29
30 August ____	N.C.	_____	Clapp et al. 1982
28 September 1972	N.C.	Carolina Beach; 1 immature	Chat 27:29

generally imply late lingering rather than early fall arrival of the species. Known records from mid-June through September are summarized in Table 1. Northern Gannets have been reported only between late October and early May in Georgia.

Based on observations from Lee's offshore surveys, Northern Gannets do not commonly occur far out at sea off the North Carolina coast. The birds are regularly encountered only within a few miles of the beach. Few sightings of gannets have been made over water deeper than 15 fathoms, most of single birds. However, Helmuth (1920) noted that gannets were very common off the Carolinas, 50 to 80 miles from shore on 24 February 1918. Nevertheless, he noted in a previous paragraph that his ship passed within 8 miles of Diamond Shoals, and he was in deep water only off Cape Fear. To the north Rowlett (1980), on the other hand, has found gannets to be regular and abundant inhabitants of deep-water zones (up to 500 fathoms). Feeding flocks were found associated with Fin Whales (*Balaenoptera physalus*) and Boston Mackerel (*Sarda sarda*). Off North Carolina the birds often gather in numbers around working trawl boats, but otherwise most feeding activity occurs within a mile of the beach. They have also been seen foraging over schools of porpoises (probably *Tursops*) at Myrtle Beach, S.C. (Chat 26:49). In Georgia, Haney has encountered the species between 1 and 25 miles offshore for the periods October to December and March to May. During midwinter, however, gannets were most abundant between 25 and 50 miles offshore in the mid-shelf area (20 to 40 fathoms), but occasional individuals were found out to the edge of the continental shelf (100 fathoms), 90 miles offshore. Gannets were occasionally observed foraging over schools of Spotted Dolphins (*Stenella plagiodon*) and very large flocks were associated with schools of Round Scad (*Decapterus punctatus*) or Atlantic Menhaden (*Brevoortia tyrannus*).

Although from time to time gannets are encountered in the extensive sounds of North Carolina, this is unusual. The only reported records of which we are aware are for early March 1980 when at least 75 were in Bogue Sound during a blizzard (Chat 43:83) and for 18 January 1958 at Swanquarter (Chat 22:24). Certainly gannets must occur in sounds far more frequently than these two reports indicate. The June 1948 specimen (NCSM 2968) came from Greenfield Lake, Wilmington, and is our only inland or freshwater record. The storm-blown bird was alive but in poor condition when discovered.

Except for the spring and fall migration periods, adult birds predominate in northern North Carolina waters; however this may not be true for southeastern North Carolina or South Carolina. It is well documented that the younger birds migrate earlier and farther south than adults and return later (see Nelson 1978), but specific records of aged birds for the Carolinas are few. Unfortunately, during most of Lee's offshore bird observations (Hatteras area) the different age classes of gannets were not tallied separately. Table 2 lists the few available North Carolina records for which age classes were recorded.

The information in Table 2 is sketchy at best and would have little meaning if it were not for the general migration pattern of the age groups being already documented for both sides of the North Atlantic. The problem is further compounded locally by several terms often being used interchangeably for the younger age classes. Most of Lee's records are from far offshore, thus leaving the bulk of the population along the beach uncounted. Between October and late December, southward migration is still under way. The adult population does not appear to dominate or stabilize until January. By mid-April,

TABLE 2. Age-class composition of Northern Gannets reported for North Carolina.
(All observation by Lee unless otherwise stated.)

<i>Date</i>	<i>First- winter</i>	<i>Immature</i>	<i>Adult</i>	<i>Total</i>	<i>Source</i>
28 October 1974	192	7	1	200	Chat 42:45
6 November 1940		20		20	Pea Island records
9 November 1979	3	1	19	21	pers. obser., offshore counts only
14 November 1978	8	1	1	10	pers. obser., offshore counts only
5 December 1978	2		3	5	pers. obser., offshore counts only
27 December 1946		3	125-150*	125-150	Chat 11:15
28 December 1982	3	29	1	33	pers. obser., offshore counts only
27 January 1982	35*	45*	720*	800	pers. obser., off beach
2 March 1984		6	28	34	pers. obser., offshore
16 March 1984	2	4	102	108	pers. obser., inshore and offshore
26 March 1983		2	17	19	pers. obser., offshore counts only
2 April 1978	1		4	5	pers. obser., offshore counts only
2 April 1984	6	10	104	120	pers. obser., inshore and offshore
4 April 1978		1	19	20	pers. obser., offshore counts only
17 April 1978	3			3	pers. obser., offshore counts only
27 April 1983	(mostly immature, migrating north)			91	Brittin, comm. to LeGrand

*estimated

however, many of the adult birds are back on the breeding grounds (Nelson 1978), and juveniles and subadults again make up the bulk of the population off our coast. Additional information on different age classes, normal seasonal variations, and how the age composition of local birds is affected by unseasonable weather would be desirable and relatively easy to obtain.

As expected, banding records substantiate that only New World stock (nesting colonies in Quebec [Bonaventure; Bird Rocks, Magdalen Islands] and Newfoundland [Cape St. Mary's]) occurs in the western Atlantic (Moisan and Scherrer 1973; see Nelson 1978 for discussion). Several of the gannets banded as chicks at Bonaventure Island have been recovered along the coast of the Carolinas.

On one specimen (NCSM 9101) the radius of the left wing was obviously broken and had healed. The bird was an adult male in good health (2990 g) when collected. Apparently the wing broke and healed while the bird was still on the nest, as it would be difficult to imagine a post-fledging bird surviving a broken wing.

Information on the general plumage development is well known, but much is yet to be learned about the sequence and timing of feather molt, particularly while birds are away from nesting areas. Gannets exhibit marked individual variation in plumage appearance and probably in the timing and sequence of molt. The plumage development of the females is advanced when compared to males of the same age. Some of the specific molt information obtained from North Carolina specimens seems to contradict previous attempts to summarize molt patterns. This is further complicated by the protracted molt period of the birds and the continuous-stage-descendant pattern (Stressman and Stressman 1960), which makes it difficult to find feather replacement on prepared study skins. Overview information provided here to keep continuity in the descriptions is from Nelson (1978).

Juvenile birds in their first year are, from a distance, nearly uniformly dark. This varies considerably in degree; some being sooty while others are light gray and quite pale beneath. This apparently has little to do with season, for the variation can be seen in individuals prior to fledging. Birds of this plumage class do not begin to molt until early March, perhaps later. Their tail feathers are extremely worn, probably as a result of the abrasion from nesting ledges during their preflight period. The V-shaped white areas on the dorsal body feathers vary in size, and on many birds they wear off by late winter. By April some first-winter birds are well advanced in postjuvenile molt. A 28 April female specimen (NCSM 9826) already has the 1st, 2nd, and 3rd primaries new, the 4th is half grown, and the rest are old (both wings). The first secondaries on each wing are new. The head and neck are becoming quite light, and feather replacement is well advanced. The back has moderate molt and the belly, although already rather pale, is only molting lightly. Four new tail feathers are emerging; the remainder are the worn original ones.

Plumage of postjuvenile (immature) gannets is extremely variable. Dorsally, they are a mixture of dark and light with dark dominating. Within this age class older birds are basically white with dark markings, younger birds are dark with white markings. In the following molt the plumage is the most variable. At this age some of our wintering birds begin to develop the blue striping of the legs and toes characteristic of adult Northern Gannets. Tails remain black, and individuals molting tail feathers continue to replace them with dark feathers. The head and neck are normally white with scattered dark feathers, but often a ventral collar of dark feathers is apparent at the base of the neck. The ventral surface is light except for the flanks. Birds in this plumage exhibited variable molt patterns. Some had new outer primaries emerging (25 November) or a few molting secondaries and tail feathers (27 January), but most were taken from migration periods and showed no active molt.

Subadult birds, probably most in the third to fourth years, are recognized by the presence of some black tail feathers and secondaries. Occasionally single black tail feathers remain for several more years into early adulthood. Some birds of this plumage class still retained bursas as late as 26 March (NCSM 7900), though others had lost them as early as 27 January (NCSM 9161). This probably reflects differences between the third- and fourth-year birds. All birds in younger plumage classes had bursas, but those in

older plumage classes did not. Typically birds in third- to fourth-year plumage had a combination of some dark secondaries (piano-key effect) and dark central tail feathers. One specimen (NCSM 6414), a male from 29 December, had only one black tail feather. Molt sequence of two males is as follows: NCSM 7900, 26 March, 7th primary of each wing in sheath and remainder new, some molt in secondaries, heavy molt of head and neck and wing coverts, moderate ventral molt, light molt of back, some new tail feathers emerging; NCSM 9161, 27 January, 2nd through 9th and 11th primaries (both wings) new, 1st very new, and 10th three-quarters grown, some molt of secondaries but no molt on the remainder of the bird.

Adult plumage is typically obtained near the end of the bird's fifth year. Adult male birds of unknown age collected on 27 January 1983 were actively molting. Examples of molt sequence are presented for two birds. On NCSM 9175 the 1st and 5th primaries of the right wing were half grown, 10th three-quarters grown, 2nd and 8th old, and the remainder new. On the left wing the 3rd and 7th were half grown, 10th three-quarters grown, 4th and 8th old, and the remainder new. The secondaries had no sign of molt except for 4th and 11th on the right wing, which were three-quarters grown, and the 2nd and 11th on the left wing, which were half grown. The primary and secondary coverts were in similar sequence. Six of the twelve tail feathers were being replaced, three in sheath and three one-quarter grown. On NCSM 9101 the 2nd and 6th primaries on both wings were half grown, the 10th on the left wing was in sheath, and the rest appeared new; 8th and 10th secondaries on the left wing and 7th and 11th on the right wing where each only about half grown. Only one tail feather was being replaced.

Food and Feeding: Examination of stomachs of 10 individuals collected off the North Carolina coast revealed little information concerning food habits. Five stomachs were completely empty and three contained only well-digested spinal columns and disarticulated fin rays of small fishes. Of the remaining two stomachs one (27 January) contained large beak segments (20 mm) and a quill of a recently consumed squid and the other (28 April) nine small (100-200 mm) Atlantic Menhaden. One Georgia specimen (UGAMNH 2060) had two Atlantic Silversides (*Minidia minidia*) and one Atlantic Menhaden in its stomach. Based on orientation in the stomach, fish were swallowed head first. Birds we have watched at sea are attracted to chum (fish offal or bread) and on occasion feed on it. In most cases gannets followed our boats when chum was offered, but they were perhaps attracted as much by the activity of feeding gulls as by the chum itself. Gannets regularly concentrate around working trawl boats, feeding on undersize fish and scraps discarded by the crew. Individuals Haney observed on the Georgia outer shelf during bottom longline surveys often dived for fish offal that had sunk out of reach of accompanying Herring Gulls (*Larus argentatus*).

Weights and Sex Ratios: Poulin (1968) provides data on weights of Bonaventure gannets. Weights of eastern Atlantic populations are summarized by Nelson (1978). Thirty-eight Bonaventure males averaged 3153 g and 24 Bonaventure females averaged 3284 g. These averaged heavier than eastern Atlantic populations. Weights away from nesting areas are not well known. Stewart and Skinner (1967) provide weights for one immature male (2948 g) and one immature female (3062 g) from Alabama. Weights on 17 North Carolina specimens (excluding sick birds and beach wrecks) are as follows:

adult male (4) 3006 (2899-3170) g, adult female (2) 3675 (3100-4250) g, subadult male (3) 3126 (2892-3402) g, juvenile male (2) 2889 (2663-3115) g, immature male (2) 2627 (2363-2891) g, immature female 3101 (2903-3300) g, immature—sex not known (2) 3682 (3629-3735) g. A juvenile female from South Carolina in the Charleston Museum weighed 3310 g. Females averaged heavier than males, and there was no seasonal correlation of weights of local birds, although the birds average below weights of birds at breeding colonies. Young birds generally weighed less than older ones.

Available information for North Carolina suggest that males predominate except during migration periods. Of a total of 12 winter specimens of known sex at the NCSM, only one is a female, and it is an immature bird from 14 November when some migration is still evident. Of five winter specimens at the University of Georgia (UGAMNH), three are males and two are not labeled to sex. Spring migrants seem evenly divided between the two sexes. There is no previous information on sexually different migration patterns, and a larger sample would be most informative.

MASKED BOOBY

The Masked Booby has been reported from the Carolinas on only a few occasions. Sprunt (in Sprunt and Chamberlain 1949) watched two adults for half an hour that “swam, dived, and flew about” on 23 January 1937 off Folly Island, S.C. The birds were in good plumage and “the black tails showed in sharp contrast to the white body plumage.” There are no other published records for that state. On 14 July 1983 Haney observed and photographed (Fig. 3a) a subadult Masked Booby at 32°08'N, 79°29'W approximately 70 miles due east of Hilton Head Island, Beaufort County, S.C., in 32 fathoms of water. He observed the bird intermittently for 45 minutes as it flew and dived near two very large (ca. 1 acre) patches of *Sargassum*. This individual closely resembled the illustration of a subadult Masked Booby in Tuck and Heinzel (1980:167), but with somewhat less ochre-brown on the head. The bird's flight was gannet-like, generally at heights of 10 feet or more, but with occasional glides to within a few feet of the ocean surface. Diving was vertical, from heights greater than 20 feet, and the bird rested for several minutes on the surface after completing a dive. Large concentrations of filefish (*Monacanthus*) and dolphin (*Coryphaena*) were associated with the *Sargassum* at this location.

Three published reports exist for North Carolina. Holmes (1966) described two immatures seen on 7 June 1966, 300 yards off Bogue Banks. These were associated with tropical storm Alma. Clapp et al. (1982) discredit this record because of its being far north of all other known records for the species and stated it is quite likely that the birds seen were misidentified Northern Gannets. Obviously Clapp and his associates are not familiar with Dr. Holmes's proven ability as a careful field observer. Lee and Platania (1979) discussed birds that were almost certainly this species described to them by boat captains from the summer of 1979 (7 and 11 July) off Oregon Inlet. In one case the captain saw them for an extended period as they dived for fish next to his charter boat. They were described as adults (“smaller like gannets but with dark tails”). The captains were later able to recognize them from illustrations in books. Davis and Needham (1983) photographed and reported on an adult Masked Booby that took up residence in a nesting colony of Brown Pelicans (*Pelecanus occidentalis*), Royal Terns (*Sterna maximus*),



Fig. 3. (a) Subadult Masked Booby (left) flying over *Sargassum* 70 miles E of Hilton Head, S.C., on 14 July 1983. (Photo by J.C. Haney) (b) Adult Masked Booby (right) at mouth of Cape Fear River, summer 1981. (Photo by J.F. Parnell)

Sandwich Terns (*S. sandvicensis*), and Laughing Gulls (*Larus atricilla*) at the mouth of the Cape Fear River. The bird was present almost continuously between 23 June and late August 1981. During this time it exhibited some territorial and nest-building behavior. It was last seen on 3 October 1981, and there is no indication that it returned to the colony in 1982 or 1983. Prior to this paper this represented the only substantiated record for the Carolinas, but moreover it is an important documented occurrence both geographically and behaviorally for this species.

Subsequently Lee has obtained additional records of this species from North Carolina's waters. In the midsummer of 1981 while Lee was offshore, a captain on another boat called and described perfectly two adult Masked Boobies that were fishing around his charter boat. Although the birds remained with that boat for some time, it was 15 miles to the north; long before Lee reached the boat the captain called to report the birds had flown off. On 9 October 1983 Captain Allen Foreman, on a boat chartered by Paul DuMont and Bob Ake out of Hatteras to observe seabirds, encountered a single nearly adult Masked Booby. [For details see "Briefs for the Files" in this issue.—ED.] A record of a single Masked Booby collected on 9 August 1983 is described in detail below. Thus there are the three 1983 records, the Cape Fear bird (Davis and Needham 1983), Holmes (1966) and Sprunt and Chamberlain (1949) records, and three (+) records reported by reliable captains. This makes a total of at least nine positive or apparently valid records (11+ individuals) ranging between 23 January and 3 October.

Additionally, Lee was told by Richard Harris (Oregon Inlet fishing fleet) that he saw several different birds during the 1983 summer fishing season off Oregon Inlet, but he did not have specific dates. He also reported a single Masked Booby in mid-August 1980. At least two other sight records of sulids that were considered Masked Boobies by the observers have been reported in the last few years. Although the birds seen were almost certainly not gannets, the records committee had problems with the descriptions of the birds, and the reports were retracted. During monthly seabird surveys conducted by

Haney and others in the central and southern South Atlantic Bight off South Carolina and Georgia, Masked Boobies were observed on five occasions between May and August 1983. Two immatures were seen by P.W. Stangel (pers. comm.) on 3 and 4 May 1983 off Georgia. Haney had single subadults on 20 June (Georgia), 14 July (South Carolina, see above), and 30 August (Georgia). All locations were well offshore at distances greater than 50 miles. Locations are shown in Figure 4.

On 9 August 1983 Lee found a single subadult Masked Booby off Oregon Inlet. Benton Basham and M.K. Clark were also on this trip. First seen from a mile (possibly more), the large white bird was sitting on the water. As the boat approached, the bird took flight, and although it was still more than three-quarters of a mile distant, the flapping-gliding flight pattern and pointed wings, head, and tail made it recognizable as a solid. This individual was pursued for about 6 miles. It left a large sargassum bed, where it was presumably feeding, and flew toward a fleet of charter fishing boats that were working over the 100-fathom contour for Yellow-fin Tuna (*Thunnus albacares*). The bird approached several of the boats and finally landed on the water next to a floating board. In flight and on the water the bird was noticeably smaller than a gannet. The booby was collected while it was trying to catch small fishes that had schooled under the board.

During the last few minutes of pursuit, we saw the bird well and were certain of its identity. In addition to its small size, its dark tail contrasted with its white body but not to the extent expected based on illustrations in field guides (see plumage description below). Because the bird was at all times flying away from the boat, no one was able to observe the head very well. When it landed, however, the dark area on the face and throat was most noticeable and seemed more pronounced than on a gannet.

The specimen (NCSM 9538) is a male (1284 g) in advanced subadult plumage and appears to be molting into adult plumage. The bird possessed very light accumulations of subcutaneous fat. The left and right gonads measured 12 x 4 mm and 10 x 3 mm respectively. A bursa measuring 14 x 28 mm was present, further confirming its youth. The bird's size is as follows: wingspan 1574 mm, total length 740 mm, wing cord 410 mm, tail 145 mm, tarsus 52 mm, and bill 101 mm. It should be noted that the Atlantic populations (*S. d. dactylatra*) are about 20% smaller than those of the Pacific (*S. d. californica*, *granti*, *personata*) and the Indian Ocean (*S. d. bedouti* and several other less distinct forms) in nearly all measurements (see Murphy 1936, Palmer 1962), although sizes of Pacific birds are most often cited in popular identification guides. We can find no information on weights of Atlantic birds, but ones published for Pacific males averaged 200 to 600 g more than the North Carolina specimen.

Coloration of the soft parts is noteworthy because of the intermediate age/plumage of the bird. The unfeathered area around the face was lead gray with only a faint tinge of blue. The throat was dark blue. The bill was progressively more yellow toward the tip. The pupil was large (5 mm diameter) and the inner portion urine yellow. The feet and legs were a uniform lead gray. The ventral plumage is white on the body and neck. Some light brown spotting is evident above the secondary under wing coverts and at the wing joint, and a large brown area is apparent on the leading edge of the foremost primary coverts. These are obviously hold-overs from the juvenal plumage. The tail feathers are so worn that they appear gray to silverish. Dorsally the pattern is much more complex. It approaches definitive plumage except as noted. The secondary coverts are essentially white with dark tips that visually merge into the secondaries. About 20% of the lesser

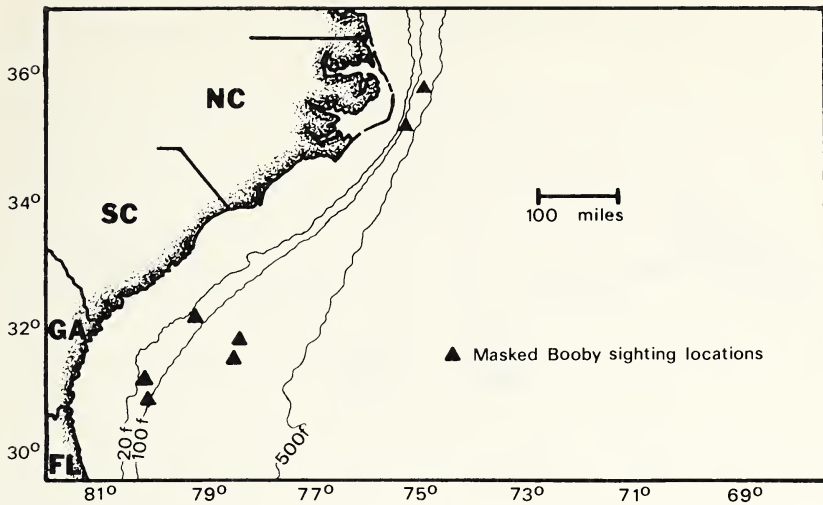


Fig. 4. Locations of 1983 Masked Booby records for the Carolinas and Georgia.

covert feathers contain elongated brown spots, which give the light portion of the wing a mottled appearance. The upper shafts and inner portions of the secondary and primary coverts are white. Normally they would be covered by overlapping feathers, but the wing is in such an advanced stage of molt that bases of many are exposed. The older dark feathers are so bleached that they would probably show silvery in flight. The posterior half of the back has an increasing number of dark feathers. Several new black feathers, some of the dark scapulars that are conspicuous at the base of the trailing edge of the wings on adult birds, are well formed. Just anterior to the new scapulars is a series of large, old feathers with dark shafts and varying amounts of faded brown. These extend out onto the wing. The remaining posterior portion of the bird and its flanks are dominated by light brown feathers. These extend into the upper tail coverts. The outer tail coverts are white and form a semidistinct white band between the body and the tail. The tail is somewhat darker dorsally than ventrally, but the badly worn feathers certainly are not black. Figure 5 illustrates dorsal and ventral aspects of this specimen as it compares to adult- and juvenal-plumaged birds. This plumage stage has not been previously described, and would certainly cause some identification problems.

The extensive molt of the bird is interesting from several aspects. First, this individual would probably have been reported as an adult if it had not been collected and closely examined. The immature features were hard to decipher from a distance. Second, information on this age and development of molt sequence is lacking. Palmer (1962) notes that stages succeeding the juvenal plumage are poorly known; although descriptions seem to be entirely lacking. Currently it is not known how many years it takes to achieve definitive plumage. Interestingly, Palmer notes one reference to a bird similar to the one described here begging for food from adults. Third, it is surprising to us that a bird in this stage of molt would be encountered at the extreme periphery of its known range. Molt

periods are generally considered stressful on seabirds and are not expected during periods of long-range movements or during nesting, although there is some evidence that sulids are exceptions.

This last point deserves some discussion. In that warm tropical seas are notoriously unproductive areas, it seems logical that long-range dispersal to subtropical/temperate seas during the nonbreeding period would be a valid strategy for many tropical seabirds. Off North Carolina this phenomenon is exhibited by the regular presence of Audubon's Shearwaters (*Puffinus lherminieri*), Black-capped Petrels (*Pterodroma hasitata*), Bridled Terns (*Sterna anaethetus*), and to a lesser extent tropicbirds (*Phaethon* sp.). In Masked Boobies this is demonstrated by a modest number of unconfirmed sightings off the Carolinas and by an impressive list of records off Florida and the Gulf Coast off the southeastern United States (see Clamp et al. 1980). These sightings cover all months, but 88% are between April and September with August having the largest number of reports (22%). To turn the argument around, it would in fact probably be more stressful for molting birds to remain in tropical waters where food sources are scarce. The molting specimen collected and the number of immatures and subadults reported suggest to us regular summer residence of Masked Boobies in the Gulf Stream off the southeastern United States. The infrequency of sightings is an artifact of limited offshore coverage, confusion concerning identification (resulting from inshore summer gannet records), and the general rarity of this booby in the Bahamas and Greater Antilles where presumably our locally occurring birds originate.

A large percentage of the northern records (Carolinas and Georgia) of this species are of juvenile/subadult birds. Because of the nature of the plumage development, several of the birds reported as adults could easily have had undetected traces of subadult plumage. It may be that the younger boobies are dispersing farther from the nesting colonies than do the adults. This would, as in the gannets, limit feeding competition between young and adults and would perhaps be even more important to birds living in nutrient-poor tropical systems. This would in part explain the discrepancy of long-range movement by the heavily molting specimen.

The seeming rarity of Masked Boobies at our latitude in the western North Atlantic may really be more an indication of the local rarity of the species than a reflection of frequency or regularity of northward movement. In other words, northward summer and postbreeding dispersal may not be aberrant, and occurrences of the species in Carolina offshore waters should not be regarded as accidental. The species has apparently been extirpated from the Bahamas (Palmer 1962; Sandy Sprunt, pers. comm.), and it is generally rare in Caribbean (Palmer 1962, Raffaele 1983). The birds encountered rather commonly in the northern Gulf of Mexico (Duncan and Harvard 1980) and regularly at Dry Tortugas are likely to be from the small colony off north Yucatan and on reefs in the southern Gulf. Contrary to previous published statements, the Carolinas seem to be well within the expected dispersal range of the Caribbean birds. Nelson (1978) regards this species as one of the three long-distance foraging species of sulids. Foraging trips of 300 miles or more from the nesting colonies are of regular occurrence. In the eastern Pacific off western Mexico, Masked Boobies are more pelagic than either Brown or Blue-footed Boobies and may be seen hundreds of miles from the nearest breeding colonies (Haney, pers. obser.). They have been found riding sunning marine turtles and sleeping while floating with heads tucked back between wings far at sea (Murphy 1936, Palmer 1962).

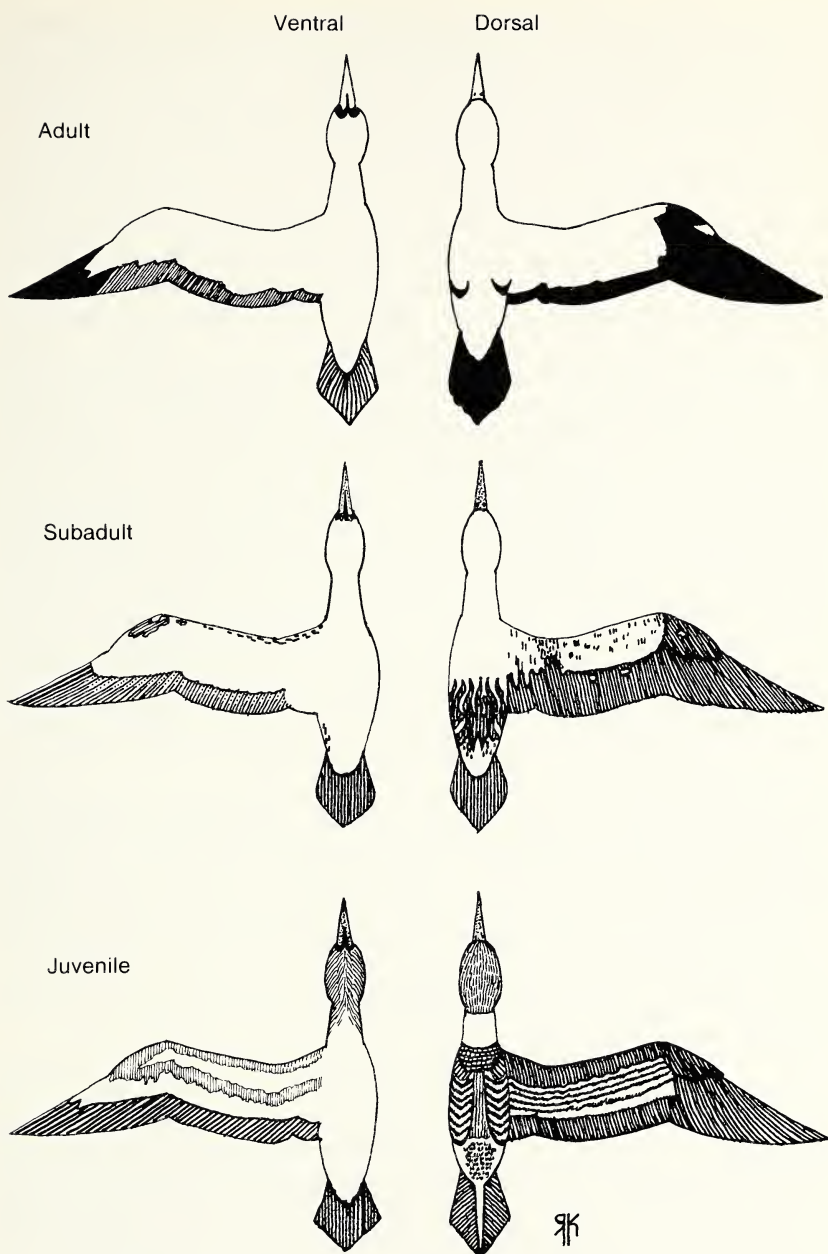


Fig. 5. Dorsal and ventral patterns of adult, subadult, and juvenile Masked Boobies, *Sula dactylatra*. The subadult is from NCSM 9538; others are modified from Nelson (1978).

The marine distribution nevertheless is not well known, with young spending much time at sea and being rarely encountered around breeding colonies. Palmer (1962) states that adults remain paired and do not appear to disperse after the breeding season, but Nelson (1978) notes dispersal for postbreeding adults and wide-ranging dispersal for young.

We can find no published information on the molt sequence of this species. In primaries on both wings the 1st through 6th are new, 7th is nearly grown, and 8th through 11th are old. The primary coverts are in the same sequence. The secondaries are a combination of old, new (R 1-3, 5, 10; L 1-5, 8-12), and growing (R 6). Tail feathers are predominantly old and extremely worn, with only three new feathers emerging. The head and back exhibit no molt, the neck is lightly molting, and the belly molt is moderate.

Because of their highly pelagic nature, most Masked Boobies in collections are from nesting grounds. Consequently, little information on seasonal molt sequence is available. Most specimens examined were in new plumage, although apparently a few individuals arrive at breeding areas in the last stages of molt. Lee examined specimens from various known breeding colonies, and a few in the Denver Museum of Natural History of *Sula d. californica* (Mexico) and *S. d. personata* (Laysan Island, Hawaii) were found in which all but the one to three outermost primaries were new. On these the preceding primaries were growing. Based on other specimens from the same colonies, however, these appear to be exceptions. On all specimens of nesting adults the tails were worn, but this is owing to their courtship activities and ground-nesting behavior, not to the age of the feathers. The specimen collected from North Carolina has a tail that appears to have been inserted into a fan. Perhaps these feathers are ones remaining from its fledging period. It is hard to imagine a seabird acquiring this feather condition away from land. Intermediate-aged gannets, for example, show no abrasive wear of tail feathers. Based on a photograph taken by Parnell of the adult that took up residence at the mouth of the Cape Fear River, it appears that molt of primary feathers had just started (Fig. 3b).

Food: The food items recovered from the stomach are in general agreement with what has been recognized as the basic diet of the species in other parts of the world (see Dorward 1962, Nelson 1978, and Schreiber and Hensley 1976). Portions of unworn squid beaks in two sizes (5 mm and 3 mm) indicate at least two recently ingested ommastrephid squid. The bulk of the stomach was filled with a partly digested Dolphin (*Coryphaena hippurus*), 135 mm TL. One other well-digested fish with a 60-mm body length (head decomposed) and some long fin rays that were probably from a small flying fish completed the stomach contents. Generally Masked Boobies eat larger fish and fewer squid than do Red-footed Boobies.

BROWN BOOBY

The Brown Booby is also represented by a small number of records from the Carolinas. This is somewhat surprising since, unlike other boobies, there are numerous records, from all months of the year, for the south Atlantic coast off peninsular Florida and the Florida Keys (see Clamp et al. 1982 for summary). The Brown Booby also has been documented to the north (Virginia, Buckley 1970; New York, Raynor 1976; Massachusetts, AOU Checklist 1957). Four immature specimens (now lost) in the Charleston Museum were labeled by Bachman as "South Carolina" (Wayne 1910), and a more recent specimen (ChM 1968. 30) was obtained on 4 January 1968. The bird, an immature, was found on a lawn in Charleston (Burton in Sprunt and Chamberlain 1970) after 4 days of fog.

Examination of the specimen provides this additional information: male, bill color blue gray, eye blue, feet yellow, little demarcation of the breast and neck (very young bird). The measurements are bill, 95 mm; wing cord, 383 mm; tail, 185 mm; tarsus, 38 mm. All feathers are old with no sign of molt, and the tail is frayed. The specimen was apparently a first-winter bird in its original juvenal plumage.

Three Brown Booby records are available from North Carolina. One is an unverified sighting reported from 10 May 1979 about 15 miles off Cape Hatteras (Lee and Platania 1979). The observed details strongly indicate that the bird in question was an adult Brown Booby. Nevertheless the viewing distance involved makes the record unconvincing. The second report is of an immature perched on a dune at Ocracoke, Hyde County, on 25 April 1983 (Amer. Birds 37:858). According to Mike Brittin, who provided a detailed written description to Harry LeGrand, the bird was approached within 35 feet. Yellow legs were evident, and a strong line of contrast was exhibited between the dark brown neck and the light brown breast and belly. Strong (15 to 20 mph) southwest winds had prevailed all day. (Brittin provided additional descriptive notes that leave no question as to the identity of the bird.) On 30 December 1981 Eloise Potter saw what she believes to have been an adult Brown Booby from the beach at South Nags Head, Dare County. The bird was uniformly very dark brown above and on the neck and upper breast. The white belly and under tail coverts were sharply defined. There was no white flash in the upper wings, but the under wings were not seen well. The bird appeared to be pointed at both ends, but the bill was never seen well; it just disappeared into the background of the ocean. The bird flew parallel to shore low over the waves with deliberate, even, moderately deep wing strokes. It was viewed in good light at a distance of one-quarter to one-half mile with a 30X Balscope. Also we should mention a single unsubstantiated listing of this booby (as [*Sula*] Fiber, L. Booby) by Curtis for North Carolina (Simpson and Simpson 1983). The Curtis manuscript was apparently written in 1866 or slightly earlier.

Other than a statement by Audubon (1840-1844) that the Brown Booby occurred off Georgia, there is but one record for this species in that state. Haney observed an immature on 14 May 1983 some 80 miles E of Ossabaw Island, Chatham County (Haney, in press). With all the trips taken off the Southeastern coast in pursuit of seabirds, it is surprising, to us, that additional records are unavailable.

DISCUSSION

Northern Gannets, Masked Boobies, and Brown Boobies occur in Carolina offshore waters. The Carolinas appear to represent the northernmost region of occurrence for Masked Boobies in the Atlantic. Additionally, it is feasible that the Red-footed Booby may eventually be encountered in the region. Most United States records, however, are from the Dry Tortugas and the Gulf of Mexico, and the only two existing sight records for the Atlantic coast of Florida are suspect (see Clamp et al. 1982). Therefore the probability of observing this species off the Carolina coast seems much less likely than for Masked or Brown Boobies.

The identification problems in recognizing species of *Sula* are considerable. This is particularly true of, but not limited to, the juveniles and subadults, and the different plumage morphs of the Red-footed Booby. Local bird students need only study closely the plumages of wintering Northern Gannets to appreciate the potential for individual

variation. This problem is further enhanced by the protracted migration period of juvenile and immature gannets combined with their occurrence as stragglers in the warmer months. The early arrival, late departure, and occasional summer records of Northern Gannets, thus, greatly overlap the period of expected occurrence for the tropical and subtropical boobies. Furthermore the documented dates of occurrence for boobies are not confined to the warmer months. Some of the best documented South Carolina booby records (Brown and Masked) are from January, and there are many Florida and Gulf Coast winter records for both these species. The seven+ Masked Boobies seen in 1983 off the Carolinas and Georgia were recorded during a season that had no hurricanes or tropical storms. It should be noted that most of the records, both well documented and provisional, are not storm related.

Offshore observations may present less confusing identification problems. Northern Gannets do not commonly venture far offshore, and under good sea conditions it is usually possible to study every *Sula* encountered. In over 1000 hours at sea off North Carolina, Lee has never seen a gannet far offshore except in the winter; so it appears likely that the few summer stragglers confine their activities to an area close to the beach.

There is still much to be learned about the distribution of *Sula* in Carolina's offshore waters. Specimens, photographs, and plumage descriptions are valuable because information for all of these birds, once they leave their breeding grounds, is scarce. Information on age classes of wintering or migrating Northern Gannets from different time periods and localities would be useful.

ACKNOWLEDGMENTS

Renaldo Kuhler prepared Figure 5, and James F. Parnell provided some of the photographs that accompany this article. Gilbert Grant and Jean Ekwall prepared and processed many of the specimens on which portions of this manuscript are based. Will Post provided access to specimens in the Charleston Museum, and Harry LeGrand made available notes on Mike Brittin's 1983 *S. leucogaster* record. This study was funded in part by U.S. Fish and Wildlife Service Contract #92375-1130-621-16 issued to Lee through the Slidell, Louisiana, laboratory. Financial support to Haney was provided by the Burleigh-Stoddard Fund, and berthing space was granted by the Skidaway Institute of Oceanography and the University of Georgia Marine Extension Service. This is contribution number 1984-6 of the North Carolina Biological Survey.

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North Carolina State Museum of Natural History, P.O. Box 27647, Raleigh, N.C. 27611, and Department of Zoology, University of Georgia, Athens, Ga. 30602.

Backyard Birding

... with Gail T. Whitehurst

A Subadult Martin Learns to Avoid Wasps?

A strategy that has evolved in insects to reduce predation is a combination of distastefulness and aposematic coloration, the theory being that the potential prey "advertises" its noxiousness through conspicuous display. The predator, once initiated, remembers to avoid insects with color patterns it associates with unpalatability.

Rarely does one observe a "novice" being "initiated." The following observation might qualify as a case in point. On 12 May 1983, at 1030, I watched as a 1-year-old Purple Martin captured a slow-flying insect. The martin quickly discarded the insect and flew onward scratching at its bill with its right foot. I rushed to where the insect had fallen and found a paper wasp (*Polistes* sp.). After a few minutes of preening, the wasp flew away, apparently none the worse for the encounter.

I have no notion as to how a wasp might taste to a bird, nor do I perceive that these rather drab insects are aposematic in their color patterns. I am reasonably sure, however, that the bird in question was stung by the wasp it had targeted as prey. Therefore, there must be plenty of incentive for birds not specialized to deal with wasps to learn to avoid these truculent hymenopterans, and the fact that many nonstinging insects seem to mimic wasps suggests that they do. I'm happy to report that the martin victimized by its intended victim also survived, wiser for the experience, one might hope.—JOSHUA A. LEE, 5104 Newcastle Road, Raleigh, N.C. 27606

Blue Jays, Where Are You?

We began to notice, in late fall, that the number of Blue Jays around our place was way down over the normal complement. As winter wore on, we saw them less and less often. We had only one bird to come, once in the mornings, for a hand-out until late January, when it was joined by a second bird. Now, at the end of February, there are only the two jays, and they only show up mornings and once in later afternoon. On our Christmas count, we found very few Blue Jays compared to previous years. It has also been noted by other birders that jays are scarce. Did they go farther south, having somehow been aware of what a cold winter we were to have? Was there a poor nesting season in the Northeast? Or have their ranks been decimated by some disease—we haven't found any bodies! If anyone has any answers, we would like to hear them.—GAIL T. WHITEHURST, 1505 Brooks Avenue, Raleigh, N.C. 27607

(Continued on Page 50)



Roundtable

... with Louis C. Fink

Hot Spot for Birds in Halifax County, N.C.

I have lived in Halifax County, N.C., since 1978. One of the best birding spots is a pond just east of CR 1618 a mile north of NC 561, near Quentin Gregory's scuppernong vineyard. Except for Roanoke River and its lakes, Gregory's Pond is the best birding spot in Halifax County, especially in late summer and fall, mainly for herons and shorebirds.

The pond is perhaps 16 acres brim full, but usually the water covers less than 10 acres because Mr. Gregory irrigates from it. The pond is a dammed swamp with dead trees in the south side near the dam, and willow thickets on the north. If the water level stays low too long, the mud flats grow up in barnyard grass, smartweed, and sedges. There usually is a fine display of cracked mud by late summer.

A mile north is Marsh Swamp, an extensive river swamp system, and a mile northeast is Quankey Creek, which runs to the Roanoke River. These adjacent waterways and the fall line, which is within 2 miles west, may account for the attractiveness of this pond to fall birds.

On 16 October 1983 I stopped at Gregory's Pond to show a friend the Cattle Egret that had been there since 24 September, plus the Great Egrets. As I drove up, I thought I saw an early Ring-billed Gull at the southwest corner of the pond. I was surprised to realize it was an American Avocet.

The bird put on quite a show, swimming, wading, flying, calling. I went home and returned with my family, a telescope, and a neighbor. We watched the avocet "spin," saw many small dead fish and strained copepods where the avocet had been turning, and pushed the avocet into the east arm of the pond.

An immature Yellow-crowned Night-Heron flushed from the stumps. I watched it through my hand-held 15-60X zoom scope. The avocet was on the water about 50 feet left and the Cattle Egret another 150 feet left. As the heron flew northeast, a large falcon came from the northwest and stooped on the avocet, which dived under the water. The avocet was noisy about its upset, and I was, too.

The immature Peregrine circled at 100 feet altitude, and then left to the southeast. It was a most upsetting experience for me, trying to look three ways at once—while trying to explain it all to neighbors and family. I have never seen such a concentration of local rarities, even at Jamaica Bay Wildlife Refuge in New York, where the urban situation

(Continued on Page 64)

General Field Notes

DAVID S. LEE

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

First South Carolina Specimen of the Philadelphia Vireo

EVELYN DABBS

Route 1, Box 64
Mayesville, S.C.

On 29 September 1975 I found a Philadelphia Vireo (*Vireo philadelphicus*) dead under the ETV (television) tower 9.7 km. (6 miles) SE of Sumter, Sumter County, S.C. The tower is 368 m (1195 feet) high. I also found the carcasses of 52 other individuals of 19 species, mainly of the families Emberizidae and Vireonidae. All had apparently collided with the structure during the night of 28-29 September.

The bird, a female, is now in the Charleston Museum (No. 1975.188). With this specimen record, the Philadelphia Vireo may now be put on the definitive South Carolina state bird list.

[NOTE: Before this occurrence, the Philadelphia Vireo had been seen in South Carolina. The first published sight record was by Mrs. R.C. Tedards, who saw "several" at Anderson, S.C., from 10 to 16 October 1962 (Chat 27:25). A second record was published by H.E. LeGrand Jr., who saw an individual at Clemson, S.C., on 14 October 1974 (Chat 39:27).—WP]

First South Carolina Specimen of the Mourning Warbler

WILLIAM POST

Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

SAMUEL P. RODGERS JR.

Route 3, Box 152
Kingstree, S.C. 29556

The first specimen of the Mourning Warbler (*Oporornis philadelphia*) in South Carolina was obtained on 30 October 1968, 5 km N of Kingstree, Williamsburg County. The bird hit a car being driven by Rodgers. The collection site is 75 km from the Atlantic Ocean. The specimen is a male in juvenal plumage. Identification was confirmed by Alan R. Phillips. The skin has been deposited in the Charleston Museum (No.

1983.170.1). With this record, the species may now be placed on the definitive state bird list.

The first published report of the Mourning Warbler was in 1940 when, on 24 and 25 May, Gabriel Cannon saw a bird at Spartanburg, Spartanburg County (Bird Lore 42:384). Cannon published no details of this sighting, but apparently communicated with either A. Sprunt Jr. or E.B. Chamberlain, who stated in *South Carolina Bird Life* (1949, p. 478) that the observer studied "a male bird at close range and in good sunlight." Because the bird was a male, and Cannon was an experienced observer, there seems to be no reason to doubt this record. However, as only one person saw the bird, and no photograph was taken, this record should have been considered hypothetical.

[NOTE: Since 1968, there have been several reports of the Mourning Warbler in South Carolina. Because of the rarity of this species in the state, and because of the notorious difficulty of separating nonadult male Mourning Warblers from Connecticut Warblers (*O. agilis*) and MacGillivray's Warblers (*O. tolmiei*), these observations must be considered by the South Carolina avian records committee before they are accepted. Bird-banders are in a particularly favorable position to help determine the status of these species in the state, as measurements can usually serve to separate them (Lanyon and Bull 1967, *Bird-Banding* 38:187-194.)—WP]

First South Carolina Record of the Lazuli Bunting

HARRY E. LeGRAND JR.
331 Yadkin Drive
Raleigh, N.C. 27609

An adult male Lazuli Bunting (*Passerina amoena*) was noted by Ned and Teddy Shuler at feeders at the home of Ned's parents in Westminster, S.C., during February and March 1981. After two unsuccessful trips to see the bird, I was finally successful on 7 March. On that date, a number of color photographs were taken by Claire Filemyr and Sidney Gauthreaux. One photo has been sent to the Charleston Museum (CM 1983.124) for documentation.

The bunting was first seen on 11 February and was not reported beyond 7 March. It frequented both a feeder placed a few meters off the ground as well as the backyard patio, where seeds were also placed. The yard was in a moderately wooded part of town, and scattered pines were present in the yard. Thus, the habitat was most unlike the typical open-country thicket and scrub habitat favored for breeding in the western United States.

The identification of the bunting was obvious. This striking bird retained the turquoise blue of the head and rump, though a few brownish feathers were mixed with the blue on the head. The area between the eye and bill was mostly black. The breast and sides were rusty, with the back mixed rusty and blue. White wing bars were very noticeable, as was the white belly. The bill was a typical conical finch bill, and the overall size was somewhat smaller than that of a Dark-eyed Junco (*Junco hyemalis*).

This is the first record for the Lazuli Bunting in the Carolinas. It has not been recorded in Virginia or Georgia, and there appear to be very few records anywhere east of the Mississippi River.

Clay-colored Sparrows in Fall in Mountains of North Carolina

FREDERICK H. TEST
247 Country Club Road
Asheville, N.C. 28804

In the early afternoon of 17 October 1982, two Clay-colored Sparrows (*Spizella pallida*) were feeding in north Asheville, N.C., on ground with sparse, low clumps of grass where I regularly scatter chick feed. Also feeding there were a White-throated Sparrow (*Zonotrichia albicollis*) and six to eight House Sparrows (*Passer domesticus*). They were in an area about 10 x 11 feet, sometimes with a foot or less separating individuals. I watched them for several minutes with binoculars, through a window, at about 25 feet. About 30 minutes later I saw a single Clay-colored Sparrow in the same place.

LeGrand (Chat 45:84) lists three recent winter records for the North Carolina coastal area, and Potter, Parnell, and Teulings, in *Birds of the Carolinas* (UNC Press, 1980) say this species is a rare transient along the coast, but they mention no records for the mountains. This Asheville sighting indicates that at least some of the birds seen along the coast may migrate there through the mountains of this region rather than coming down the coast from a crossing farther north.

BACKYARD BIRDING (Continued from Page 46)

A Fair Trade-off?

Our suburban backyard is a far cry from what is normally considered good habitat for the Fox Sparrow. We do not see them very often, and then only during migration or on a snowy winter day. However, we have been most delighted during the winter of 1983-1984 to have had a Fox Sparrow feeding here daily. It appeared on 17 December, just in time to get in on the Wake Audubon Christmas Count. Perhaps the bird is a bird-of-the-year and had no previous experience in picking a winter territory. Perhaps it chose to stay as long as there were plenty of food, a supply of water, and a few evergreen shrubs for cover. The bird is very shy and prefers to feed at first light in the mornings and in late afternoons. It is also very quiet. I have never heard it utter a sound—not a scold note nor a call note of any kind. It has developed a taste for my hand-out food of cornmeal and peanut butter, and occasionally darts out from cover to grab a piece. Mostly it feeds on wild-bird seed and sunflower seed that fall on the ground while the House Finches are scrapping on the hanging feeder. The bird is a beautiful rich red-brown color, similar to that of a Brown Thrasher. This is the first winter in many years that we did not have a thrasher, so maybe it was a fair trade-off for both of us; a Fox Sparrow for a Brown Thrasher for me, food and water versus the solitude of a thicket for the bird.—GAIL T. WHITEHURST, 1505 Brooks Avenue, Raleigh, N.C. 27607

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1983 unless otherwise indicated)

COMMON LOON: Two seen on 24 October on Lake Norman, N.C., by David Wright were slightly early. Another was seen in flight over the Balsam Mountains, N.C., at 5800 feet, on 31 October by Douglas McNair.

HORNED GREBE: One in breeding plumage was rather late on 2 and 3 June at Cape Hatteras point, N.C., as seen by Paul Buckley. A fairly good inland count was 30, reported by Ricky Davis and Allen Bryan at Jordan Lake, N.C., on 30 October.

PELAGIC TRIPS OFF NORTH CAROLINA: Several very successful trips were taken to Gulf Stream waters off Cape Lookout on 27 August (Allen Bryan, Ricky Davis) and off Cape Hatteras on four dates this fall (Robert Ake and party).

	Lookout	Hatteras			
	27 Aug.	27 Aug.	28 Aug.	8 Oct.	9 Oct.
Black-capped Petrel	2	25	13	29	30
Cory's Shearwater	82	39	570	178	128
Greater Shearwater	2		15	1	4
Sooty Shearwater	1		3		
Audubon's Shearwater	15	16	154	27	484
Wilson's Storm-Petrel	15	56	80	19	40
White-faced Storm-Petrel			1		2
Leach's Storm-Petrel		1			1
White-tailed Tropicbird			1		
Red-billed Tropicbird	1				
Masked Booby					1
Red-necked Phalarope	12	75			6
Red Phalarope		1			
Pomarine Jaeger	2		13	3	15
Arctic Tern	1				
Bridled Tern	1	3	16		
Sooty Tern		1	1		

Notes on the rare species: The WHITE-FACED STORM-PETREL on 28 August was photographed by Dave Ward [photo examined by me--HEL]; all three were seen well by Ake and many other observers. The WHITE-TAILED TROPICBIRD was an immature seen on the water next to the boat [photo by Ward also examined by me--HEL]. It had a moderately small yellow bill; small dark patch extending through and only slightly beyond the eye; and the black on the wingtips in flight limited to the primaries, not extending onto the coverts. The RED-BILLED TROPICBIRD was described in *Chat*

47:100-101. The MASKED BOOBY was seen on the water and in flight at very close range. Details provided by Ake include: "black nearly complete along flight feathers," and "80% of tail black; wide-based bill with extensive dull yellow undertones on panels; blackish maskiness around bill base onto face skin, including eye area." The ARCTIC TERN seen by Davis was 55 miles from shore; he stated: "the underwing primary pattern and grayer color were very obvious to me; the bill was all red."

PELAGIC TRIPS OFF CHARLESTON, S.C.: Dennis Forsythe made eight trips off Charleston to waters 60 miles offshore from 7 August to 27 November. Cory's and Audubon's Shearwaters, Wilson's Storm-Petrels, and Bridled Terns were seen on almost all trips through 2 October. Good totals were 87 Cory's on 22 August and 20 Bridleds on 18 September.

BLACK-CAPPED PETREL: Chris Haney saw two to four on 13 October approximately 90 miles E of Myrtle Beach, S.C. [This location is perhaps in North Carolina waters; offshore boundaries between states have not been, or have been poorly, delineated for ornithological purposes.—HEL] Two were also noted on 5 September off Beaufort Inlet, N.C., by Wayne Irvin.

CORY'S SHEARWATER: From shore in Carteret County, N.C., Brainard Palmer-Ball and others noted one on 3 August at Atlantic Beach and two on 5 August at Cape Lookout.

MANX SHEARWATER: Very rare for the Carolinas was one seen by Chris Haney about 90 miles E of Myrtle Beach on 29 September.

AUDUBON'S SHEARWATER: Seen from shore were 12 at Cape Lookout on 5 August (John Fussell et al.) and one very late at Atlantic Beach on 23 October (Fussell).

LEACH'S STORM-PETREL: Chris Haney noted one on 12 October approximately 90 miles E of Myrtle Beach.

BAND-RUMPED STORM-PETREL: This petrel (formerly called the Harcourt's Storm-Petrel) was considered accidental in the Carolinas only a few years ago, but it has been seen on a handful of pelagic trips off North Carolina recently. Wayne Irvin observed three about 30 miles SE of Cape Lookout on 20 August. A "probable" Band-rumped was also noted by Dave Sibley and Robert Ake off Hatteras on 28 August.

ANHINGA: Philip Crutchfield saw one as late as 21 September at Jessup's Mill Pond near Fayetteville, N.C.

DOUBLE-CRESTED CORMORANT: Inland birds were seen this fall in North Carolina at Roanoke Rapids Lake, Falls Lake, Jordan Lake, and Rose's Lake (near Fayetteville), as well as Lake Hartwell, S.C. Notable totals were 40 during the season at Jordan Lake (Bill and Margaret Wagner) and 16 at Falls Lake on 16 August (Robert Hader).

GREAT CORMORANT: Very rare for Carteret County was an immature at Radio Island from 27 November to 13 December (John Fussell, Robert Hader).

AMERICAN WHITE PELICAN: Single migrants were noteworthy at Hatteras Inlet from 17 October into December (Jo and Joel Clark et al.), at Radio Island near Morehead City on 15 November (Thomas Newport), at Jordan Lake on 25 November (Wayne and Fran Irvin), at Charleston on 22 September (Tom Hutche-

son), and at Magnolia Gardens near Charleston on 6 November (Reed and Connie Taylor).

AMERICAN BITTERN: Somewhat early was one seen by Jim McConnell at Falls Lake on 23 August, and another noted by Ron Warner was rather rare for the mountains at Hendersonville, N.C., on 2 November.

LEAST BITTERN: Perry Nugent and party observed a late bird at Magnolia Gardens on 12 November.

GREAT EGRET: An excellent piedmont count was 135 at Falls Lake, made by Robert Hader on 3 September.

TRICOLORED HERON: Uncommon inland were one to two near Townville, S.C., during most of August, with one on 18 September (Sidney Gauthreaux et al.); one near Fort Mill, S.C., on 10 August (David Wright); one at Cowan's Ford Dam on Lake Norman, N.C., on 1 and 2 September (Wright, Heathy Walker); and one at Falls Lake on 3 September (Robert Hader).

CATTLE EGRET: Late for the piedmont were individuals in central Halifax County, N.C., from 24 September to 18 October (Frank Enders) and at Jordan Lake on 28 and 30 October (Robert Hader, Ricky Davis, Allen Bryan). Philip Crutchfield observed as many as 250 on several days in August near Fayetteville.

NIGHT-HERON: (SP.?): Jay Carter observed immatures at Carolina bays on 9 August in Scotland, Robeson, and Hoke Counties, N.C., and another on 21 and 30 August near Mount Gilead, N.C.

YELLOW-CROWNED NIGHT-HERON: Normally a rare species in the piedmont, three were seen at Jordan Lake on 24 September (Chapel Hill Bird Club), and single individuals were near Townville on 22 and 28 August and again on 2 and 6 October (Sidney Gauthreaux, Douglas McNair), at nearby Lake Keowee on 9 September (Paul Hamel), near Fort Mill, S.C., on 10 August (David Wright), and on 16 October in central Halifax County (Frank Enders).

WHITE IBIS: The better counts of postbreeding visitors in North Carolina were 5 noted by Allen Bryan at Lake Mattamuskeet on 27 July, as many as 9 seen by Bill Wagner and others in late July and August at Jordan Lake, and 10 seen by Jay Carter near Hasty in Scotland County, N.C., on 9 August.

GLOSSY IBIS: Bill Wagner and others reported one or two at Jordan Lake from late July to 20 August.

GREATER WHITE-FRONTED GOOSE: An excellent piedmont total of eight were seen on 10 December by Anson Cooke at Jordan Lake.

SNOW GOOSE: A white-phase goose was rare at Jordan Lake on 5 November, as seen by James and Elizabeth Pullman.

BRANT: Apparently a second record for the North Carolina piedmont was an immature carefully studied by Bill and Margaret Wagner and Mary Alice Foster at Jordan Lake on 14 November. Two were slightly to the south of their winter range at Beaufort, N.C., on 27 November (Robert Hader, John Fussell).

BLUE-WINGED TEAL: A good inland count was 200, as seen by Bill and Margaret Wagner at Jordan Lake in early September.

- EURASIAN WIGEON:** Very rare for South Carolina were two pairs noted by Bob Cowgill at Kiawah Island on 27 November and a male seen by Dennis Forsythe and party at Magnolia Gardens from 5 to 12 November.
- RING-NECKED DUCK:** A male was out of season near Chester, S.C., on 24 July (David Wright). Good inland counts were 185 at Cashiers, N.C., on 17 November (Douglas McNair) and 74 on Shallowford Lake in western Forsyth County, N.C., on 27 November (Joanne and Joy Skafidas).
- COMMON EIDER:** Unusual for early fall was an immature male noted by Bob Lewis and others between 31 August and 4 September at Hatteras Inlet.
- OLDSQUAW:** Ricky Davis found a male at Jordan Lake on 13 November.
- BLACK SCOTER:** Quite rare inland was a female seen by Allen Bryan and Ricky Davis at Jordan Lake on 30 October, whereas a good total of 1000 were noted by Perry Nugent and others on 3 December at Folly Beach, S.C.
- COMMON MERGANSER:** Unusually early was a female carefully observed by Merrill Lynch and Karen Masson at Roanoke Rapids Lake, N.C., on 23 and 30 August. Another female was somewhat early at Jordan Lake, where she was seen with 18 Red-breasted Mergansers on 13 November by Ricky Davis.
- TURKEY VULTURE:** James and Elizabeth Pullman noted 140, an unusually large number for North Carolina, on 25 November just north of Pittsboro.
- MISSISSIPPI KITE:** An adult, described in detail, was studied on 6 October by David Wright near Davidson, N.C. Three adults and an immature along US 258 at the Roanoke River, N.C., on 13 August (Merrill Lynch, Harry LeGrand) provided the latest record for the population along this river.
- BALD EAGLE:** Inland reports continue to increase, and individuals were noted (all in North Carolina) at Lake Cammack near Burlington, at Roanoke Rapids Lake, at Woodlake near Vass, Lake Wheeler near Raleigh, near Fayetteville, and at Jordan Lake. At the last lake on 3 September, Wayne Irvin and Mason Baldwin observed seven soaring in one thermal, drifting to the southwest, and two more were seen later that day. Irvin also saw three, probably different birds, at Jordan Lake on the following day. Jay Carter noted that one of the two Bald Eagles at Woodlake between 2 October and 17 November was observed catching a live American Coot.
- NORTHERN HARRIER:** Individuals seen by David Wright on 7 July near Beaufort, N.C., and on 9 July at Pea Island, N.C., could have been breeders. Douglas McNair noted several migrating high over the Balsam Mountains, N.C., this fall, with a peak of three at 6200 feet in elevation, over Black Balsam Knob on 3 October.
- NORTHERN GOSHAWK:** An excellent find was an adult seen by Jay Shuler at Flat Rock, N.C., on 7 October.
- BROAD-WINGED HAWK:** Ramona Snavelly and others noted an excellent flight this fall at Pilot Mountain State Park, N.C. The peak count was 1434 birds on 23 September (Pat and Jim Culbertson).
- ROUGH-LEGGED HAWK:** Philip Crutchfield observed one hovering along US 421 south of Greensboro, N.C., on 20 November. Details included: "legs were feathered;

head, shoulders, chest pale; rest of body very dark, leg feathering pale; tail white with single dark band at tip; wings whitish on tip of primaries and wrist dark." [This is one of the few reports of this species I have received with reasonably complete details. Only the shape of the bird was not described; in fact, few reports have ever included details on shape and behavior. Rough-leggeds have longer and slimmer wings and tails than do Red-tailed Hawks and actually resemble small Turkey Vultures in shape. The underwing of all color phases is quite distinctive; the light- and intermediate-phase birds have a large and conspicuous black wrist that stands out at a great distance against the white flight feathers. The shape of the bird, the underwing pattern, and the flight behavior (considerable bend in the wing at the wrist during flapping, a dihedral when gliding, and frequent hovering) are often conspicuous long before the tail pattern is observed.--HEL]

GOLDEN EAGLE: Two adults were observed by Ron Warner at Devils Courthouse, along the Transylvania-Haywood County line, N.C., on 24 September.

AMERICAN KESTREL: David Wright noted an apparent pair on the Davidson College campus in Davidson, N.C., on several dates in June 1982.

MERLIN: Inland migrants were sighted on 11 September near the Wateree River in Kershaw County, S.C. (Charlie Wooten); at Raleigh on 19 September (Wayne Irvin); near Vass, N.C., on 1 October (Tom Howard et al.); near Chapel Hill on 6 October (Bill and Margaret Wagner); near Townville on 22 November (Dan Cohan); and near Fayetteville on 6 and 12 October and 21 November (Philip Crutchfield).

PEREGRINE FALCON: Somewhat rarer inland than the Merlin, and thus notable, were two seen at Chapel Hill on 18 September by Charlie Lyon and Ross and Brenda Jervis. Single Peregrines were also inland near Vass on 2 October (Tom Howard party), at Jordan Lake on 4 October (Andy Towle, Tony Shrimpton), and in central Halifax County on 16 October (Frank Enders).

BLACK RAIL: David and Jill Wright found a new breeding-season site for this species, on Roanoke Island, N.C. They heard five calling from 8 to 10 July in *Juncus* marshes between Manteo and Wanchese. At established sites, they heard three at Cedar Island, N.C., on 7 July and one at North River near Beaufort on the same day. All birds were responding to taped calls.

PURPLE GALLINULE: An immature was late at Sunset Beach, N.C., on 17 October, as seen by Philip Crutchfield.

COMMON MOORHEN: Rare migrants were observed by Bill and Margaret Wagner on a pond near Chapel Hill on 9 and 10 September, and by Don Tarbet at Lake Wheeler near Raleigh on 30 October and again on 4 November by Jim Mulholland.

SANDHILL CRANE: Slightly out of range were five migrants seen by Charlie Wooten near Townville on 13 November. Another was seen 4 miles S of Saint Matthews, S.C., on 10 December by Ben Gregg, Ann Timberlake, and Theodore Snyder.

BLACK-BELLIED PLOVER: Scattered individuals were noted by many observers at Jordan Lake from 28 July to 17 November. Tom Howard and others had one or more at Woodlake near Vass from 30 September to 21 October, with four on 29

October. Five were seen by Robert Hader at Falls Lake on 24 October, and one was seen at Fayetteville on 10 and 11 October by Philip Crutchfield.

LESSER GOLDEN-PLOVER: Approximately 12 reports were an excellent number for a single fall season. There were many records of one or two birds at Jordan Lake, at least to 4 October. At Falls Lake were 10 on 22 August (Jim McConnell), and three were very late there on 19 November (Bill and Margaret Wagner). Rare for the Charlotte area were one at Cowan's Ford Dam on Lake Norman from 11 to 15 September (Paul Hart, Heathy Walker, David Wright) and another in northern York County, S.C., on 22 September (Wright). Notable along the coast were a late bird seen by Pat and Clay Sutton at Pea Island on 12 November and a possible Carolina record of 40 found by John Fussell and Wayne Irvin at Davis, N.C., on 18 September.

PIPING PLOVER: Always exciting inland was a Piping Plover seen at the McAlpine sewage treatment plant in Pineville, N.C., from 13 to 17 August by Paul Hart and David Wright.

BLACK-NECKED STILT: Five stilts seen at Kiawah Island, S.C., by Bob Cowgill on 21 June perhaps indicate a breeding population there.

AMERICAN AVOCET: Locally rare were one seen by John Fussell and others on Shackleford Banks, N.C., on 5 August, one noted by Bob Cowgill at Kiawah Island on 16 August, and one to two seen by Fussell from 15 August to 19 September at Fort Macon State Park, N.C.

LESSER YELLOWLEGS: Inland birds were late at Lake Norman at Cowan's Ford refuge on 5 November (Heathy Walker) and near Winston-Salem on 10 November (Ramona Snively et al.).

SPOTTED SANDPIPER: John Fussell observed a late Spotted at Morehead City on 23 November.

UPLAND SANDPIPER: A very good inland tally of 12 was made by Evelyn Dabbs on 4 July at Shaw Air Force Base near Sumter, S.C. One was also rare inland near Ringwood in Halifax County, N.C., on 21 and 22 September (Merrill Lynch, Karen Masson).

WHIMBREL: Seldom seen away from the coast were individuals found at Jordan Lake on 5 September by Ricky Davis and on 1 and 9 October by Andy Towle, Tony Shrimpton, and others. John Fussell had a very rare sighting of a Eurasian-race Whimbrel (with white on the rump and lower back) at Fort Macon State Park on 17 October.

LONG-BILLED CURLEW: Four individuals, an outstanding count for North Carolina, were noted by Fred Patton on Portsmouth Island on 8 October.

HUDSONIAN GODWIT: The first record for Carteret County, N.C., in 12 years was one seen by John Fussell and Ricky Davis at Fort Macon State Park on 28 August.

MARBLED GODWIT: The first Marbled ever seen inland in the Carolinas was an individual at Jordan Lake, noted by Bill and Margaret Wagner and dozens of other birders from 25 August to 10 September. Uncommon for June were five seen on the 2nd at Hatteras Inlet by Paul Buckley.

RUDDY TURNSTONE: From one to three were observed by Allen Bryan, Ricky Davis,

and others at Jordan Lake from 3 to 11 September.

SANDERLING: Perhaps record inland counts were made at Jordan Lake, where 25 were seen on 3 September (Allen Bryan, Ricky Davis) and at least 50 were noted on 20 September (Bill and Margaret Wagner et al.). One was quite early there on 3 August (Jim McConnell). Elsewhere inland, five were at Lake Norman in Lincoln County on 15 September (Paul Hart), five were at Winston-Salem on 18 September (Barbara Page, Charles Frost), one was near Fairplay, S.C., on 18 September (Sidney Gauthreaux et al.), and two were at Falls Lake on 20 September (Robert Hader).

WESTERN SANDPIPER: The best inland count was 15, seen at Jordan Lake on 3 September by Allen Bryan and Ricky Davis.

WHITE-RUMPED SANDPIPER: Rare inland were two seen by Ricky Davis at Beaverdam Reservoir in northern Wake County, N.C., on 11 September, and one seen near Pineville, N.C., on 18 and 19 October by Clare and Heathy Walker. John Fussell observed a late White-rumped at Fort Macon State Park on 7 November.

BAIRD'S SANDPIPER: Good finds were one at Davis, N.C., on 4 September (John Fussell, Henry Haberyan, T.L. Quay), and two at Jordan Lake on 3 September, with one remaining to 10 September (Allen Bryan, Ricky Davis, and others).

DUNLIN: Individuals were uncommon inland at Jordan Lake, Roanoke Rapids Lake, Falls Lake, Fayetteville, and Creech's Pond in northern York County, S.C. One at the last site was rather late on 27 November (Heathy Walker).

STILT SANDPIPER: Surprisingly large numbers were observed at several spots inland, including 23 at Jordan Lake on 10 September (Allen Bryan, Ricky Davis). Others inland were 11 near Burlington on 4 September (Bryan), 6 at Clemson on 2 September (Douglas McNair), 6 at Roanoke Rapids Lake on 25 September (Merrill Lynch), 4 at Winston-Salem on 18 September (Pat and Jim Culbertson), and 1 near Townville on 14 August (Sidney Gauthreaux et al.). The best coastal count was 120 at Davis, as noted by John Fussell and party on 7 August.

BUFF-BREASTED SANDPIPER: Disappointingly low numbers were detected this fall, with no count of over two birds. Individuals were seen at Jordan Lake on 4 September by Wayne and Fran Irvin, near Clemson on 11 and 18 September by Sidney Gauthreaux and party, near Pineville on 24 September by David and Jill Wright, and at Cedar Island on 22 and 23 September by John Fussell and others.

RUFF: Ricky Davis observed one at an impoundment at Davis on 28 August. He also reported a previously unpublished sighting of one at Kure Beach, N.C., on 1 August 1978.

SHORT-BILLED DOWITCHER: Rare for the Charlotte area were three seen at Cowan's Ford refuge by David Wright on 14 September and one there from 20 to 23 September. An outstanding inland count was 55 seen by Allen Bryan and Ricky Davis at Jordan Lake from 3 to 5 September.

LONG-BILLED DOWITCHER: Dennis Forsythe saw and heard four in grassy pools at a park in Charleston on 8 September. Rather rare in spring were one at Cape Hatteras point and five at Pea Island, all on 30 May (Paul Buckley). Scarce inland were singles noted at Jordan Lake on 27 August by Jim McConnell and at Beaverdam Reservoir on 11 September by Ricky Davis.

- COMMON SNIBE:** Allen Bryan counted at least 232 snipes, a very large number, in one field near Gull Rock Game Land in Hyde County, N.C., on 30 November.
- WILSON'S PHALAROPE:** Paul Buckley observed 1 at Pea Island on 3 June; whereas notable records for Carteret County were 10 seen by John Fussell and T.L. Quay on 3 September at Fort Macon State Park, and 1 very late seen by Fussell at the same place on 24 October. Inland birds, always noteworthy, were at Jordan Lake on 18 September (Mike Schultz, Andy Towle) and at Falls Lake on 20 September (Robert Hader).
- RED-NECKED PHALAROPE:** Quite rare inland was one seen at Jordan Lake on 18 September by Mike Schultz and Andy Towle, and likely the same bird there on 24 September (Ricky Davis, Bill Wagner, and others). Paul Buckley found another at Pea Island on 3 June.
- RED PHALAROPE:** Four seen in flight and swimming on Lake Mattamuskeet on 21 September by Allen Bryan was an excellent report away from the coast.
- PARASITIC JAEGER:** John Fussell observed 22 jaegers, most or all of this species, at Atlantic Beach in 2 hours on 23 October. He saw two more Parasitics at Cape Lookout on 28 October.
- LAUGHING GULL:** Rather rare inland were one at Jordan Lake on 1 October (Anson Cooke et al.) and two at Santee National Wildlife Refuge on 25 November (Perry Nugent et al.).
- BONAPARTE'S GULL:** Quite early were a juvenile seen by John Fussell at Fort Macon State Park on 15 August and an adult there on 28 August.
- RING-BILLED GULL:** Bill and Margaret Wagner sighted a rather early gull at Jordan Lake on 19 September.
- LESSER BLACK-BACKED GULL:** An adult was noted by Claudia Wilds at Ocracoke on 25 November.
- BLACK-LEGGED KITTIWAKE:** Immatures were observed on pelagic trips off Cape Lookout on 28 October and 13 November (Wayne Irvin) and off Charleston—the second ever for South Carolina—on 13 November (Dennis Forsythe).
- CASPIAN TERN:** Fairly good inland counts were six at Roanoke Rapids Lake on 25 September and seven on 30 September (Merrill Lynch, Karen Masson); five at Jordan Lake on 29 August (Johnnie Payne, Bill and Margaret Wagner) and five again on 22 September (Wagners); and four at Lake Norman on 31 August (David Wright). Single birds were also found rather early on 6 August at Fayetteville (Philip Crutchfield) and 12 August at Roanoke Rapids Lake (Lynch, Harry LeGrand).
- SANDWICH TERN:** Five seen by Perry Nugent and party were rather late on 3 December at Folly Beach, S.C.
- COMMON TERN:** Claudia Wilds carefully observed two adults at Cape Hatteras on 26 November. [There is a growing suspicion by many birders in the East that the majority of Common Terns reported in winter, particularly on Christmas counts, are actually Forster's Terns. Observers should be extremely careful when reporting this species after November.—HEL]
- FORSTER'S TERN:** An excellent count of 35+ was made by Andy Towle at Jordan Lake on 14 September.

- BRIDLED TERN:** Apparently the first ever seen from shore in North Carolina, except after a hurricane, were two at Cape Lookout on 5 August, noted by Brainard Palmer-Ball, John Fussell, and Henry Haberyan.
- SOOTY TERN:** Rare onshore was one seen by Dwight Woods on Waits Island at Little River, S.C., on 12 July.
- BROWN NODDY:** A notable record, particularly as it was not storm-related, was a noddy seen by Chris Haney about 38 miles ESE of Charleston on 11 October.
- BLACK-BILLED CUCKOO:** The only fall report was an individual noted by Ricky Davis at Beaverdam Reservoir on 25 September.
- SHORT-EARED OWL:** This species is not known to nest in North Carolina; thus, one carefully observed in late afternoon flying over a marsh near Wanchese on 9 July by David and Jill Wright was surprising.
- NORTHERN SAW-WHET OWL:** Douglas McNair noted one at Highlands, N.C., on 30 October. Even more noteworthy was one injured by a car in Union County, S.C., on 9 November, according to David Wright. It was turned in to the Raptor Rehabilitation and Research Center at the University of North Carolina at Charlotte.
- COMMON NIGHTHAWK:** Unusual after October were single birds noted on 1 November at New Bern, N.C., by Bob Holmes and on 6 November at Fayetteville by Philip Crutchfield.
- CHIMNEY SWIFT:** Bill and Margaret Wagner observed at least 1000 near Chapel Hill on 31 August.
- RED-HEADED WOODPECKER:** An immature was a rare migrant at Highlands on 26 September (Douglas McNair).
- OLIVE-SIDED FLYCATCHER:** One seen by Bill and Margaret Wagner near Chapel Hill on 9 September was a good find.
- YELLOW-BELLIED FLYCATCHER:** Charlie Wooten saw and heard one along the Wateree River in Kershaw County, S.C., on 11 September; David Wright observed another in northern York County on 18 September. Will Post collected one for the Charleston Museum at Sullivans Island, S.C., on 8 October.
- WILLOW FLYCATCHER:** One was seen and heard calling by Anne Waters near Aiken State Park, S.C., on 10 August.
- LEAST FLYCATCHER:** Evelyn Dabbs mist-netted a migrant near Mayesville, S.C., on 21 September.
- WESTERN KINGBIRD:** There were four reports of single individuals along the North Carolina coast (Coinjock, Buxton, Ocracoke, and north of Southport), all between 12 and 27 November.
- HORNED LARK:** Seldom seen in the southeastern coastal plain of North Carolina was a lark in northeastern Pamlico County on 30 October (Philip Crutchfield).
- PURPLE MARTIN:** Wayne Irvin and John Fussell saw a late individual at Cedar Island on 18 September.
- TREE SWALLOW:** Perry Nugent and party estimated 250,000 at Huntington Beach State Park, S.C., on 9 October; whereas James and Elizabeth Pullman had three late (for an inland locality) at Jordan Lake on 13 November.

- NORTHERN ROUGH-WINGED SWALLOW:** Very late for the Carolinas were four seen by Merrill Lynch near Vulture, Northampton County, N.C., on 30 September.
- BANK SWALLOW:** A good coastal flight of 30, in 15 minutes, was seen by Harry LeGrand at Sunset Beach, N.C., on 20 August.
- COMMON RAVEN:** David Wright saw and heard one in South Mountains State Park, N.C., on 29 May. A park ranger reported to him that ravens have nested in the vicinity for several years.
- CAROLINA WREN:** At a very high elevation was one at 5500 feet in the Balsam Mountains, N.C., on 31 October (Douglas McNair).
- SEDGE WREN:** Uncommon migrants in Halifax County were birds seen by Merrill Lynch on 28 September near Ringwood and by Frank Enders on 22 October near Darlington.
- MARSH WREN:** Douglas McNair noted one in the mountains at Cullowhee, N.C., on 10 October.
- BLUE-GRAY GNATCATCHER:** Late-lingering birds were seen by Allen Bryan and Jim Von Backnell at Lake Mattamuskeet on 12 November and by Charlie Lyon on 25 November at Jordan Lake. Bill and Margaret Wagner also noted a gnatcatcher at the latter site on 5 December.
- WOOD THRUSH:** About 3 weeks late was one seen by Ross Earnest at Pine Knoll Shores, N.C. on 6 November.
- WATER PIPIT:** Douglas McNair observed one on 4 October, and three on 31 October, at 6200 feet in elevation at Black Balsam Knob in the Balsam Mountains.
- PHILADELPHIA VIREO:** Probably the largest influx of migrants ever recorded in the Carolinas occurred in fall 1983. Reports for North Carolina were: six by Ricky Davis in the Raleigh and Chapel Hill areas between 11 September and 8 October; sightings by Merrill Lynch in western Halifax County on 15, 23, and 25 September; three to perhaps five at Bodie Island, N.C., from 23 to 25 September (Heathy and Clare Walker, Allen Bryan); one at Lake Mattamuskeet on 21 and 24 September (Bryan); one at Pine Knoll Shores on 6 October (Ross Earnest); one at Jordan Lake on 22 September (Charlie Lyon); one at Davidson on 16 September (David Wright); and one at Devils Courthouse along the Blue Ridge Parkway on 3 October (Douglas McNair). In South Carolina were two near Fort Mill on 26 and 27 September (Wright) and one at Clemson on 12 October (Charlie Wooten).
- GOLDEN-WINGED WARBLER:** Rare for the coast was one, with a Blue-winged Warbler, seen by John Fussell and Robert Hader at Emerald Isle, N.C., on 24 September.
- TENNESSEE WARBLER:** Rather rare for the Charleston area were singles seen at Folly Beach on 9 October by Dennis Forsythe and on 15 October near Charleston by Perry Nugent.
- ORANGE-CROWNED WARBLER:** Two at Crowders Mountain State Park, N.C., on 30 October (Paul Hart), one there on 3 November (Hart), and one in northern Mecklenburg County on 12 November (David Wright) were notable for the Charlotte area.

NASHVILLE WARBLER: One was rare on the coast at Pine Knoll Shores, as seen by Ross Earnest on 23 September. Of the three reports for the Charlotte area, the most notable was one that lingered until 8 November (Heathy Walker).

CAPE MAY WARBLER: Over a month late was an individual observed by Charlie Lyon at Jordan Lake on 25 November.

BLACK-THROATED BLUE WARBLER: David Wright noted one at South Mountains State Park on 29 May. These mountains are seemingly below the normal elevations for breeding, but the record may indicate a breeding bird.

YELLOW-RUMPED WARBLER: Rather early was one seen by Douglas McNair near Pickens, S.C., on 23 September.

BLACKBURNIAN WARBLER: Infrequently seen near the coast were two at Lake Mattamuskeet on 23 September (Allen Bryan) and one at Moore's Landing near Charleston on 14 October (Tom Reeves).

YELLOW-THROATED WARBLER: Allen Bryan found a very late bird at Lake Mattamuskeet on 30 November.

PRAIRIE WARBLER: One seen by Jim Mulholland near Raleigh on 20 November was at least a month late.

BAY-BREASTED WARBLER: Good counts for tidewater North Carolina were made by Allen Bryan on 23 September: seven at Lake Mattamuskeet and three at Bodie Island.

CERULEAN WARBLER: David Wright found a male near Fort Mill, S.C., on 8 August, the only report for the fall.

BLACK-AND-WHITE WARBLER: Rather late was one seen by Shirley Wheeling at Fayetteville on 24 November.

WORM-EATING WARBLER: Presumably on their breeding grounds, several were heard and one was seen by David Wright in South Mountains State Park on 29 May.

SWAINSON'S WARBLER: At the site in the South Mountains where the species was previously reported this spring, David Wright had three singing birds on 29 May and one on 17 June. Philip Crutchfield noted one at Clark's Park near Fayetteville on 30 August.

NORTHERN WATERTHRUSH: Charlie Wooten observed a late waterthrush at Clemson on 27 October.

KENTUCKY WARBLER: Very rare in fall along the coast, one was seen by Ross Earnest at Pine Knoll Shores on 23 September.

CONNECTICUT WARBLER: This scarce migrant was detected at Pea Island on 25 September by Heathy and Clare Walker and at Bat Cave, N.C., on 27 September by Ron Warner.

WILSON'S WARBLER: Notable for the mountains were single birds near Fairview, N.C., on 24 September (Ruth Young) and at Devils Courthouse, N.C., on 3 October (Douglas McNair).

CANADA WARBLER: Tom Reeves saw a rare coastal migrant at Magnolia Gardens near Charleston on 23 September.

- SUMMER TANAGER:** Late at Rock Hill, S.C., was one on 7 November, as seen by June and Albert Conway.
- WESTERN TANAGER:** Quite early was a female or immature at a feeder in Fayetteville on 12 September (Ruth Chesnutt). Another feeder bird was seen in Kathleen Mallard's yard in Sumter, S.C., from late November into early December, according to Evelyn Dabbs and Steve Compton.
- ROSE-BREASTED GROSBEAK:** Ron Warner saw a male on the late date of 2 November in Hendersonville, N.C.
- BLACK-HEADED GROSBEAK:** Very rare was a female or immature observed by Charles Frost at Winston-Salem on 1 November. He noted the buffy-yellow breast with few or no stripes.
- DICKCISSEL:** David Wright followed up on the colony found in late May near Kings Mountain, N.C. He noted three males on 3 June and two males on 17 June, but no conclusive evidence of breeding was seen. A migrant was seen at Pea Island on 15 October by James and Elizabeth Pullman.
- CLAY-COLORED SPARROW:** The only fall report was one seen by Chris Marsh at Fort Macon State Park on 12 October.
- LARK SPARROW:** Individuals were at Sullivans Island on 26 August (Tom Reeves), near Charleston on 2 September (Edwin Blich), and at Pea Island on 23 September (Allen Bryan).
- SAVANNAH SPARROW:** [In a recent paper (Chat 47:72-73) on territorial Savannah Sparrows in Alleghany County, N.C., I incorrectly stated that there were no previous summer records for the state. Eloise Potter has informed me of a previous record, by Wendell P. Smith at North Wilkesboro in 1967 (Amer. Birds 21:669). He stated: "A pair of Savannah Sparrows frequented the area and were seen as late as June 8. No evidence of nesting could be detected."—HEL]
- GRASSHOPPER SPARROW:** Migrants seen at Pea Island on 13 October (James and Elizabeth Pullman) and near Fayetteville on 18 November (Philip Crutchfield) were notable, though not truly rare.
- HENSLOW'S SPARROW:** One of the rarest of Eastern migrants was a Henslow's seen well at Creech's Pond in northern York County on 15 October by David Wright and other members of the Mecklenburg Audubon Society.
- SHARP-TAILED SPARROW:** One was seen by Andy Towle and Tony Shrimpton at Jordan Lake on 17 October was a good inland find.
- FOX SPARROW:** Ron Warner noted one at the high elevation of 6053 feet at Richland Balsam, along the Blue Ridge Parkway, N.C., on 10 November.
- LINCOLN'S SPARROW:** The only fall reports were made by Ricky Davis at Beaverdam Reservoir on the early date of 25 September and by Will Post at Sullivans Island on 4 November.
- WHITE-THROATED SPARROW:** Completely out of season was an adult seen by Merrill Lynch and Harry LeGrand on 13 August where US 258 crosses the Roanoke River in Northampton County, N.C.

- DARK-EYED JUNCO:** Early was one seen by Jay Carter and others on 1 October at Hoffman, N.C.
- LAPLAND LONGSPUR:** Quite early, and notable inland, was one studied carefully and heard calling by David Wright and Ali Winrich on 9 October in northern York County. Another was observed by James and Elizabeth Pullman at Pea Island on 14 October.
- SNOW BUNTING:** In Carteret County, single birds were seen by Skip Prange at Harkers Island on 22 November and by Robert Hader at Radio Island on 25 November. Quite unusual inland was one seen perched and in flight along a road on Barrett Mountain, 3 miles S of Taylorsville, N.C., on 11 December by Derek Carrigan.
- YELLOW-HEADED BLACKBIRD:** A female was seen by Kathy Kirkman at her feeder at Pine Knoll Shores on 22 and 23 September. An adult male, seldom seen in fall, was found by Allen Bryan at Lake Mattamuskeet on 24 September.
- PURPLE FINCH:** Early were individuals seen at Chapel Hill on 23 September (Bill and Margaret Wagner) and near Pineville on 24 September (David Wright). Douglas McNair had an excellent flight of 800 migrating past Black Balsam Gap in the Balsam Mountains on 31 October.
- HOUSE FINCH:** Ten were seen in migration at Black Balsam Gap (elevation 3300 feet) on 31 October by Douglas McNair. Excellent counts for South Carolina, both in York County, were 126 banded at York by Bill Hilton from 30 October to 27 November and 125 observed in one field at Catawba on 27 and 28 November by June and Albert Conway.
- RED CROSSBILL:** Douglas McNair saw large numbers in the Highlands, N.C., area, with an average of 25 to 30 per day from late September into November. The peak was 100 on 3 October.

CBC ROUNDTABLE (Continued from Page 47)

helps to concentrate birds. I'm not sure I want to, or even can, stand such excitement as I grow older.

My neighbor thought he had seen this hawk a few days before over his house, and I may have seen it again a few days later at my home, 3 miles west. The avocet was not at the pond on 18 October, 2 days later.—FRANK ENDERS, Route 2, Box 67 A, Halifax, N.C. 27839

600 Club

Terry Moore writes from Atlanta that members are “folding the tent” on the 600 Club. It was felt that ABA and 600 Club were duplicating their efforts, and the Club's reason for existence had faded with the publication of the Sixth Edition of the AOU Checklist. Moore is now devoting his time and experience to editing *The Oriole*.

The Mail

We had a most gracious letter from Claudia Wilds, author of *Finding Birds in the Capital Area*. She was badly misquoted in the *Washington Post*, and Claudia wants all friends in CBC to know that she is not a list-crazy birder. “I haven't chased a life-bird in America for years,” she adds. One of the best parts of conducting this column is meeting many nice people.—LCF

Some Love Them, Some Do Not

In St. Louis, they are trying to route 300,000 blackbirds with kites having pictures of hawks.

In Fairfield, California, model airplanes are being used to chase 10,000 European Starlings.

In Chatsworth, New Jersey, cranberry farmers complain about birds the *New York Times* calls “white tundra swans.” (Tundra Swans were formerly called Whistling Swans.) Anyway, the birds like a weed called red root. To get it, the swans pull up cranberry vines. The growers want a hunting season on these protected birds.

Raised Eyebrows Department

From *Virginia Wildlife* in an article on the American Kestrel: “this small bird is no larger than a sparrow.”



MEMBERSHIP

Carolina Bird Club, Inc., is a non-profit educational and scientific association founded in March 1937 and open to anyone interested in the study and conservation of wildlife, particularly birds. Dues, contributions, and bequests to the club are deductible from state and federal income and estate taxes. Checks should be made payable to Carolina Bird Club, Inc., and sent to CBC Headquarters, P.O. Box 2764, Raleigh, N.C. 27611.

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(USPS 101-020)

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Editor	Eloise F. Potter, Route 3, Box 114 AA, Zebulon, N.C. 27597
General Field Notes	David S. Lee, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 1505 Brooks Avenue, Raleigh, N.C. 27607
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—Mark A. Shields and James F. Parnell report on nesting attempts by Sooty Terns near Wilmington, N.C. (pages 73-74). A bird Dr. Parnell photographed in flight appears on our front cover.

Population Decline of Black Vultures in North Carolina

PAUL A. STEWART

As opportunity permitted, I have followed the population trends of Black Vultures (*Coragyps atratus*) throughout the southeastern United States since 1959. From 1975 to 1981 the number of Black Vultures has declined in a three-county region (Granville, Vance, and Warren Counties) of northcentral North Carolina.

In April 1975 I found a foraging flock of Black Vultures gathered around a poultry farm near Oxford, Granville County, N.C. I later found these birds often gathering at this farm. They normally remained at the farm for several hours at midday. As I often passed this farm or visited it in my daily activities, repeated counts (154 in all) were made of the Black Vultures present there in 1975 and in succeeding years (Table 1). A decline in numbers was shown each succeeding year through 1980, with an average annual decline of 20%. The rate of decline averaged 17% from 1975 through 1978 and 25% from 1979 through 1980.

To check further on the decline in the population of Black Vultures in the region around my home, I attempted to gather information on the nesting activities of these birds. I ran an advertisement during April and May of both 1979 and 1981 in three weekly issues of the *Tri-county Shopping Guide*, offering \$10 for information on the locations of active nests of "buzzards," the name commonly used by the local residents. This publication goes to all homes in my study area. I expected to receive reports of both Black Vultures and Turkey Vultures (*Cathartes aura*).

Three active nests of Black Vultures were reported to me during 1979, and I had a fourth nest on my farm in an old building I maintain for use by nesting vultures. In 1981 no new nesting sites were reported to me, but a pair of Black Vultures nested in an old house where a pair had been reported nesting in 1979. At another site where a pair nested in 1979, two birds were seen for a short time in early May of 1981, but they apparently did not nest. No Black Vultures nested on my farm in 1981. The smaller number of known nests in 1981 is not surprising given the annual decline of 20% shown by the counts of birds (Table 1).

The coverage of possible nesting places by the method used in my nesting survey is, of course, biased in favor of nests in old buildings, for these nests are much more likely to be discovered than are those located elsewhere. I have known of Black Vultures nesting locally in a place other than in an old building only twice since 1965, the year I came to the study area. Although I realize that I may have missed some such pairs during 1979 and 1981, I strongly believe that I found most or all of the Black Vultures nesting in Granville, Vance, and Warren Counties during those 2 years. This conclusion is strengthened by the fact that I saw Black Vultures regularly in the vicinity of known nesting sites.

My population inventory involves only a small portion of the total range of Black Vultures in the southeastern United States. The number of these birds present in the three counties as recently as 1975 indicates the area contains acceptable or even preferred

habitat. This region contains poultry farms and herds of grazing cattle, both situations attracting food-hunting Black Vultures (Stewart 1978). Also, there are numerous abandoned farm buildings furnishing possible nesting places for these birds.

As I have found by observation of marked birds and general field observations both inside and outside of my three-county study area, the Black Vultures occurring here are part of a major population with its center of activity in Chatham County, N.C. In Chatham County I have seen larger congregations of Black Vultures than I have seen in Granville, Vance, and Warren Counties, but I have too few data to determine whether a decline is taking place in the central portion of this population as well as in my peripheral portion. However, there appears to have been no change in the three-county area that is likely to have caused a sharp decline totally unrelated to the condition of the major population. The chicken farm where the Black Vultures gather continues unchanged in operation, and the old buildings used for nesting remain unchanged.

My research is one factor that must be recognized as having contributed toward reducing the population of Black Vultures in northcentral North Carolina. This was most evident in the side effects of banding. One bird of the pair that nested on my farm in 1980 had been banded earlier, and dried fecal material gathered between the band and the bird's leg, impairing blood circulation to the bird's foot. The pair failed in two nesting attempts in 1980. I saw the banded bird placing its immobilized foot on top of its eggs instead of beneath them in attempts at incubation, finally breaking both eggs in two successive clutches and raising no young in 1980. I banded 194 Black Vultures in my three-county study area during the period 1973 through 1976. I suspect that the increased rate of decline from 17% for the period 1975 through 1978 to 25% for 1979 through 1980 may have been caused by my research efforts or those of another researcher working in Chatham County. Authorization for the use of leg bands on vultures has properly been discontinued by the U.S. Fish and Wildlife Service because of the habit these birds have of defecating on their legs, presumably as an aid in body cooling (Hatch 1970).

I also attempted to use the Christmas Bird Counts to determine population trends among Black Vultures as I had done with Barn Owls (*Tyto alba*) (Stewart 1980), but I soon decided that such use could not be made reliably because of the wide-ranging foraging movements of these birds. The same birds could conceivably be seen by different observers many miles apart on different days or even on the same day (see Parmalee and Parmalee 1967).

A lack of suitable and safe nesting facilities may be one important factor in the decline of Black Vulture populations. Of the three nests reported to me in 1979, only one was successful. The newly hatched young disappeared from one nest, and the eggs or newly hatched young disappeared from another. In 1981 the young disappeared soon after hatching from the single nest I found containing eggs.

A special situation in regard to a safe nesting place is provided on my farm where I maintain an old building for use by nesting vultures. The birds enter the building through an open window too high above the ground for easy access by animals that cannot fly. The door is kept locked. This building was used successfully by nesting Black Vultures each year from 1970 through 1980, except during the two seasons when my research interfered with this activity. The building was not used by nesting Black Vultures in 1981, when I did not interfere.

TABLE 1. Numbers of Black Vultures seen in 154 counts made at a chicken farm near Oxford, Granville County, N.C., 1975 through 1980.

<i>Year</i>	<i>No. counts</i>	<i>Range in number of birds</i>	<i>Average number of birds</i>	<i>Percentage decline</i>
1975	21	61-72	66.7	
1976	33	50-62	55.1	17.4
1977	24	39-56	47.8	13.2
1978	26	31-44	38.2	20.1
1979	17	21-34	27.5	28.0
1980	33	17-27	21.3	22.5

Average annual rate of decline 20.2

Because Black Vultures in North Carolina usually nest in old buildings, their nests are readily found by humans and are thus highly vulnerable to the whims of humans. Many farmers do not like Black Vultures, which they suspect of killing and eating newborn farm livestock, and it can be assumed that farmers who experience such losses, or suspected losses, would destroy any nests of these birds found in their buildings. Some cattlemen make no secret of their activities in killing Black Vultures. Parmalee (1954) reported that a cattleman in Nacogdoches County, Texas, trapped and killed 1500 of these birds in one year. I have found other cattlemen in Texas and elsewhere who operated large traps, leaving the Black Vultures to die in the traps, thus attracting others to the same fate. Some curbing of these activities has resulted from intervention by persons concerned about the inhumaneness involved, but a cattleman in Texas told me in 1978 that he was still trapping and killing the birds. In early 1981 I learned of a similar trapping and killing program on a cattle ranch in Florida.

Fortunately, not all cattlemen consider Black Vultures to be harmful to their interests. For example, at a cattle ranch in Alabama, where about 100 vultures were at the time gathered among the cattle in his pasture, a rancher told me that he has no problems with vultures killing newborn calves. He said that the birds eat only the afterbirths associated with calving unless dead animals are present.

North Carolina state law requires that farmers bury or incinerate dead poultry and livestock, a procedure I consider unnecessary unless the animals die from an infectious disease or produce odors that are offensive to neighboring property owners. A widespread shortage of carcasses on farmland leaves the public highways a major source of food for vultures. Pick-up truck owners in the Southeast often carry a gun over the back window of the vehicle, and birds attracted to road kills make tempting and easy targets.

The Black Vulture population in northcentral North Carolina appears to have declined precipitously between 1975 and 1980, with a slightly higher rate in the last two years of the period. New research should be aimed at continued monitoring of the Black Vulture population, at providing safe nesting places, and at determining how more food can be made available for vultures without violating a state law.

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BOOK REVIEWS

BIRDS OF ROAN MOUNTAIN AND VICINITY. [1984]. Glen Eller and Gary Wallace. Lee R. Herndon Chapter, Tennessee Ornithological Society. 12 p. Available from Glen D. Eller, Route 9, Box 1340, Grandview Terrace, Elizabethton, Tennessee 37643, \$1.90 including postage.

Dedicated in memory of Lee R. Herndon and Fred W. Behrend, the booklet contains a brief description of the Roan Mountain area (map on back cover) and 10 pages of two-part bar graphs showing relative abundance of each species according to season of occurrence and elevation. Early dates of arrival and late dates of departure are shown for migrants. An asterisk following the species name indicates known breeding. The species order is that of the Sixth Edition of the A.O.U. *Check-list of North American Birds* (1983). The graphs are based primarily on the field records of TOS members in the Elizabethton chapter. The authors are to be congratulated for making this large body of distributional data available in a convenient format. Everyone interested in the bird life of the southern Appalachians will want a copy.—EFP

SUBURBAN WILDLIFE. 1984. Richard Headstrom. Prentice-Hall, Inc., Englewood Cliffs, New Jersey 07632. Illustrated by Jennifer Dewey. 176 p. Softbound \$8.95.

Although the author is a former resident of Aiken, S.C., this collection of informal nature essays is strongly influenced by his experiences in New England. Fortunately, most of the articles tell where the animals can be found or are so generalized that geographic distribution is not a problem; however, the one on summer birds is misleading to people who do not live where certain species (e.g. American Bittern, Black-billed Cuckoo, and Vesper Sparrow) nest. The article on bats is particularly enjoyable because it deals effectively with some of the unfortunate myths that surround these flying mammals. Subjects include insects, spiders, and earthworms as well as the vertebrates most likely to be encountered in the suburbs. Headstrom's conversational style of writing makes for easy reading, and the book should appeal to young people.

Suburban Wildlife is a PHalarope Book, one in a series of publications based on nature courses taught at colleges, museums, or nature centers. Other titles deal with topics such as astronomy, botany, fossil collecting, and the seashore.—EFP

Backyard Birding

... with Gail T. Whitehurst

Backyard Nesting, a 25-year Synopsis

Do birds nest in your yard? The chances are they do. Unless you take pains to make your premises utterly barren of all vegetation, and seal up all crannies about your buildings, birds of one kind or another are likely to gain a toehold and build a nest. If you, like me, plant a good-sized garden in the back and flank it with hedgerows and a virtually unmanageable briar patch, you can expect birds to flock in. Add to that some trees here and there, a well-fertilized lawn, and certain specific encouragements by the lord and master of the estate, and you have a veritable paradise for birds. When we moved to the site in west Raleigh, it was little more than an abandoned pasture turned suburbia. Thus it has been interesting to observe the site change over time and the nesting bird population change in tandem to wit:

(1) Eastern Bluebird. The bluebird nested regularly when the site was quite open, that is up until about 1968. Possibly the vegetation became too dense for the bird's liking, or the neighborhood cats became too numerous.

(2) Chipping Sparrow. It nested in low shrubbery during the time the bluebird was in residence and disappeared about the time the bluebird left.

(3) Northern Mockingbird. Friend mocker arrived about when we did and remained. The local pair seems to rotate nesting in my yard and a neighbor's seemingly on an odd-year basis.

(4) Brown Thrasher. Nests regularly in the bramble patch.

(5) Gray Catbird. Likes the hedges and brambles; one nest found thus far.

(6) Rufous-sided Towhee. Nests regularly in brambles.

(7) Brown-headed Cowbird. Towhees were observed feeding a juvenile cowbird in 1978.

(8) American Robin. Robins commenced nesting on the premises about the time the bluebirds departed, at a time when the trees and shrubs became tall enough to give the robin the combination of open space and nesting height the bird seems to require.

(9) House Wren. The House Wren seems to like the same texture of environment as the robin. A pair has nested in a neighbor's yard for about 10 years. In 1983 a pair nested in a gourd in my yard for the first time.

(10) House Sparrow. The House Sparrow is not encouraged to nest on the premises. Nevertheless, about three pairs nest each year in thick shrubbery on the property line.

(11) Tufted Titmouse. The titmouse nested in a gourd under the eaves in 1983.

(12) Orchard Oriole. This species has nested for 2 years in succession in the top of a pecan tree.

(13) Northern Cardinal. The cardinal prefers some crepe myrtle bushes in a neighbor's yard, but occasionally nests in a tall shrub in my yard.

(14) Blue Jay. Nested in a pecan tree in 1983.

(15) Purple Martin. A colony has nested in the backyard for all of the 25 years we've dwelt in west Raleigh. In recent years the colony has stabilized around 12 pairs, but the number of pairs has varied from 6 to more than 20.

(16) Cottontail Rabbit (?). A rabbit is not a bird, but when a mother rabbit nests on the back lawn in plain view of the breakfast-nook window and raises four young, it's worth reporting. We expect the squirrels to commence nesting in our pecan trees any day now, the better to tote off our pecan crop. Any of you backyard birders out there need a squirrel?—JOSHUA A. LEE, 5104 Newcastle Road, Raleigh, N.C. 27606

[Note: Changing habitat, influx of cats, House Sparrows and Starlings have combined to push bluebirds out in our suburban area, too. We do not put up any birdhouses with holes large enough for bluebirds as House Sparrows will take over. They are persistent, however. One spring I observed them building an elaborate, domed nest high up in a Virginia Pine, showing their heritage as weaver finches rather than sparrows.—GTW]

Backyard Birding on the Road

Once a birder, always a birder. No matter where we go on vacation, we are always aware of the birds at the places we stay, be it the backyard of a home, or a motel. My adult children live in the Denver area of Colorado. It is kind of rough to have them so far away, but this provides a wonderful reason to go visit. My son lives in Littleton, which is just south of Denver, and the area there is part of the Great Plains (with the Rocky Mountains visible to the west). A visit there last fall provided some most interesting backyard birding. Imagine waking up in the morning to the song of the Western Meadowlark and raucous calls of the Black-billed Magpie. Or how would you like to hear the familiar call of the Northern Flicker and when you look up to see it flying overhead, note that the wing linings are red instead of yellow? From a nearby lake, one often sees gulls flying on their way to a favorite feeding place. The smaller species is Franklin's Gull! New species to us easterners, yes! But what is more interesting to a backyard birder is that the Western Meadowlark behaves just like our familiar Eastern or that the magpie reminds one of our cocky Blue Jay—just bigger, flashier, and noisier.

Perhaps one of the neatest motel birding experiences we ever had was in Sanford, Florida, a few years ago. The motel was on a small peninsula jutting out into Lake

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Roundtable

... with Louis C. Fink

All You Ever Wanted to Know about Seaside Sparrows—and More

The Seaside Sparrow: Its Biology and Management is now available for \$15 postpaid from the North Carolina State Museum of Natural History, P.O. Box 27647, Raleigh, N.C. 27611. Edited by Thomas L. Quay, John B. Funderburg Jr., David S. Lee, Eloise F. Potter, and Chandler S. Robbins, this 174-page softbound book is the proceedings of a symposium on the Seaside Sparrow held at Raleigh in October 1981. In addition to the keynote address by F. Eugene Hester, now Deputy Director of the U.S. Fish and Wildlife Service, the book contains 17 scientific papers presented by authorities on the species, including Oliver L. Austin Jr., Herbert W. Kale II, John William Hardy, and William Post. Vicky McDonald's extensive annotated bibliography of the literature on the species will be a valuable aid to future researchers. The book features a full-color 8½ x 11-inch frontispiece by John Henry Dick showing the nine races of the Seaside Sparrow. A phonograph recording prepared by Dr. Hardy demonstrates the various vocalizations mentioned in the text. When ordering publications from the Museum, please make checks payable to NCDA, Museum Extension Fund.

Raptors in the News

Peregrine Falcons, raised in captivity, have been released on Grandfather Mountain in North Carolina. They were kept in cages until familiar with the surroundings, meanwhile being fed by unseen human caretakers.

Bald Eagles have been released in other areas, and at least one pair nested near Lake Mattamuskeet in Hyde County, N.C. Two young hatched in the nest, which is at an undisclosed site on private property.

Incidentally, the American Society for the Prevention of Cruelty to Animals has declared the Bald Eagle the "animal of the year."

Newspaper Gleanings

The national spelling bee was won by a boy who knew how to spell "towhee."

Bird-listers, eat your hearts out. Three Kenyans identified 290 species in a 24-hour period. Olive Thrush and African Wood Owl came in the last 30 minutes. According to the press, rules provide for a stretch of 24 hours from midnight to midnight, with the

team limited to four members. Each one of the four must see (or hear?) 95% of the birds to make the count official. The Kenyan team covered 334 miles.

It is estimated that 150,000 pairs of Herring and Ring-billed Gulls create a nuisance in Lake Ontario near Toronto, Canada. A peninsula of compacted trash was built for parkland, and the gulls discovered it. Local beaches had to be closed because of the droppings. Now citizens of Cleveland, Ohio, are worried by an influx of gulls.

Chief of Staff James Baker opened his window in the White House office, and a bird flew in. The General Services Administration tried—without success—to get the bird out; finally, it flew off of its own will. According to UPI, no one was sure whether the bird was a catbird or a mockingbird. (Reminds me of the Song Sparrow we found inside a burglar-proof vault in a bank in Atlanta, Georgia.)

Roger Tory Peterson, from an interview in the *Chicago Tribune*: “Birds don’t have any more freedom than we do; there are definite restrictions. . . . Ichthyologists are birders with bum ears, so they turn to fishes. . . . Columbus was the first American bird watcher, and he followed a flock of birds that cut 200 miles off his trip and may have prevented mutiny. . . . I have seen 4,000 species out of a possible 9,000 or so—but I have never seen a Bachman’s Warbler.”

More About Warblers Ingesting Grit

My note about warblers ingesting grit (Chat 47:103-104) has prompted comments by several readers. Two reports seem appropriate for Roundtable.

Cornelia S. Chapin, 67 Baynard Park Road, Hilton Head, S.C. 29928, writes in a letter dated 12 February 1984: “Your article was of particular interest to me as I have been mixing ground eggshells in my feeder seeds as well as scattering them on the ground. Much to my surprise, a male Yellow-throated Warbler and a pair of Pine Warblers come every day to the feeder. My husband and I have watched them eat the eggshells with apparent gusto. Other birds like thrashers, wrens, towhees, sparrows, chickadees, and titmice also eat the shells. Would you believe they consume a dozen eggshells per week? Could it be the minerals the birds seek as well as grit?”

Joe Jones, Route 2, Box 302, Berryville, Virginia 22611, kindly sent me a copy of his “Bird Notes” column from the *Albany* (Georgia) *Herald* of 6 April 1980. After commenting on the large influx of northbound American Robins and Yellow-rumped Warblers, the author continues:

“Wondering what it is the Yellow-rumped Warblers eat on the ground, I learned I’m not the only Albany birder to whom this is a mystery. When I talked about it with Mrs. Jim Parsons of Cherry Laurel Lane, whose lawn was also alive with Yellow-rumped Warblers on March 26, she said she was so curious as to what they were eating she employed a magnifying glass in an attempt to find out. She drew a blank.

“Using the glass, and expecting to see minute forms of insect life, she examined the ground where the warblers had been feeding and discovered nothing she could imagine would be of interest to them.

“‘Some of them were eating in the driveway,’ she said, ‘so I examined it, too, but couldn’t find anything but gravel. I don’t see how it could have been that. They were

(Continued on Page 84)

General Field Notes

DAVID S. LEE

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Occurrence and Nesting of the Sooty Tern in North Carolina on the Lower Cape Fear River

MARK A. SHIELDS

JAMES F. PARNELL

Department of Biology
University of North Carolina at Wilmington
Wilmington, N.C. 28403

On 30 April 1982, while visiting a colonial waterbird breeding colony on a dredged-material island in the lower Cape Fear River, New Hanover County, N.C., Parnell found an adult Sooty Tern (*Sterna fuscata*) on the ground in a grassy area near the edge of a Laughing Gull (*Larus arcticus*) colony. Thinking the tern was ill or injured, he picked it up and discovered a single egg on the ground beneath the bird. The nest, a slight depression in the sand, was lined with a few blades of grass and was lightly covered by blades of Salt-meadow Cordgrass (*Spartina patens*). Both the tern and its egg were photographed, and the bird was quickly placed back on its nest, where it resumed incubation. Copies of the photograph have been deposited at the North Carolina State Museum of Natural History. When the island was next visited on 3 May, the tern was present but its egg was missing. The Laughing Gull colony had expanded into the area of the tern nest, and gull predation was probably responsible for the disappearance of the Sooty Tern egg. The tern was not sighted on several subsequent trips to the island.

On 13 April 1983, Shields observed an adult Sooty Tern while conducting a survey of a colonial waterbird nesting colony on another dredged-material island in the Cape Fear River, several km downstream from the 1982 Sooty Tern nesting site and in Brunswick County. This tern was first noticed as it circled overhead, calling loudly, with a group of Laughing Gulls, suggesting that it may have been defending its nesting area. The tern alighted several times on a piece of driftwood in a grassy area at the edge of the beach. An intensive search of this area revealed no Sooty Tern nest. The tern was not seen during a brief visit to the island on 22 April, but was observed again on 3 and 4 June perched on the same piece of driftwood as before. Another search of the grassy area around the driftwood produced no nest. The bird was not seen again after 4 June.

Another sighting of an adult Sooty Tern was made by Shields on 25 April 1984 on the island in Brunswick County. This tern, possibly the same one seen the previous year,

exhibited behavior similar to that observed in 1983, but again no nest was found. The Sooty Tern was still present in mid-May when this note was submitted for publication.

Several aspects of our observations are noteworthy. First, the Sooty Tern nest discovered in 1982 is only the second confirmed nesting attempt in North Carolina by this species, whose normal breeding grounds are about 1000 km to the south (A.O.U. Check-list, 1983). Second, the nest in New Hanover County was quite similar to the first nest of this species found in North Carolina at Morgan Island, Carteret County, in 1978 (Fussell et al. 1981). Both were located on dredged-material islands occupied by nesting colonial waterbirds, and both nests were placed in grassy areas associated with nesting Laughing Gulls, away from the bare domes occupied by other nesting tern species. Both nests were also apparently destroyed by Laughing Gulls. Finally, the three sightings reported here are the only records of Sooty Terns along the North Carolina coast south of Cape Lookout that were not associated with the passage of tropical storms. They are also the earliest sightings of Sooty Terns in North Carolina, with the exception of the first record of this species in the state on 16 March 1869 (Pearson et al. 1942, Lee and Booth 1979).

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Red-bellied Woodpecker Predation on Nestling Nuthatches

MICHAEL L. DUNN

Cliffs of the Neuse State Park

Route 2, Box 50

Seven Springs, N.C. 28578

While canoeing in Lassiter Swamp above Merchants Millpond, Gates County, N.C., on 21 April 1982, I heard a disturbance in a tree along the creek. This was followed by a splash in the water behind the tree and additional shrill cries from above. When I finally had the tree in view, I could see a male Red-bellied Woodpecker (*Melanerpes carolinus*) probing repeatedly into a hole in a gnarl approximately 30 feet up in a Tupelo Gum (*Nyssa aquatica*). After several tries (with continued distress calls coming from inside the cavity), the woodpecker pulled a nestling from the hole. At this time a White-breasted Nuthatch (*Sitta carolinensis*) arrived on the side of the gnarl. It was carrying a food item, apparently a caterpillar. Giving its characteristic note, the nuthatch moved about the gnarl in an agitated manner. The woodpecker then flew to a nearby upward-sloping branch, carrying the nestling, which it apparently ate with rapid jabs that continued for 2 or 3 minutes. The remains of the nestling, however, were not visible from below after the woodpecker flew away. Investigating the source of the splash

heard at the beginning of the incident, I found a nestling White-breasted Nuthatch that apparently had been pulled from the nest and dropped by the woodpecker.

Similar episodes have been reported by other observers. Roach (Fla. Field Nat. 3:19) saw a male Red-bellied Woodpecker remove three young and one egg from a nest that may have been its own or that of a neighboring pair of the same species. Roach heard one of the three nestlings fall into the underbrush. He could not determine whether the adult was a parent trying to move the young to another cavity or a competitor attempting to clean out the cavity for its own use. Watt (Wilson Bull. 92:249) saw a female Red-bellied Woodpecker remove three young in succession from an American Redstart (*Setophaga ruticilla*) nest. Neither woodpecker was seen eating the nestlings.

Red-bellied Woodpeckers do not always act as predators when they encounter young of other pairs or other species. Curry (Wilson Bull. 81:470) describes an instance when a fledgling Tufted Titmouse (*Parus bicolor*) was fed by an adult Red-bellied Woodpecker that was in the process of carrying food to its own young still in the nest. Pursued by the begging titmouse, the woodpecker backed away several steps, but leaned forward and fed the young bird when it continued to advance.

BACKYARD BIRDING

(Continued from Page 70)

Monroe (on the St. John's River). Here was a spot where land and shore birds abounded in early May. Hundreds of migrating Tree Swallows were feeding on thousands of strange flying insects, called "love bugs" by the natives. There were Black Skimmers (a surprise as this was fresh water), Black-necked Stilts, Caspian Terns, assorted sandpipers, and Brown Pelicans. But the most delightful find of all was a flock of over a dozen White Pelicans. Also of interest were the female Red-winged Blackbirds in the tall grasses beyond the parking area—they had a pinkish cast to their body feathers! Could it have been something they eat? If feeding upon shrimp can enhance the rosy color in flamingoes and spoonbills, we wondered, could it be that these blackbirds, which appeared to feed from time to time at the water's edge, were gleaning tiny shrimp? What really threw us for a loop for a while were the strangely colored ducks and geese we saw. We later learned that they had escaped from a nearby zoo some years earlier and interbred with the local domestic species—the combination of European and Asian species with Mallards produced some quite bizarre specimens.

Wherever one stops overnight in Florida can be exciting and give close-up views of herons and egrets, White Ibis, and Wood Storks. So you see, you can take your backyard birding with you wherever you go and add another dimension to your travels.

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates Fall 1983 and Winter 1983-84
unless otherwise indicated; CBC = Christmas Bird Count)

COMMON LOON: Allen Bryan saw approximately 2000 in 2 hours migrating past Gull Rock Game Lands in Hyde County, N.C., on 1 December.

RED-NECKED GREBE: Very rare inland were two seen at Jordan Lake in Chatham County, N.C., on 1 January by Andy Towle and Tony Shrimpton. Two were noted by Perry Nugent at Folly Beach, S.C., on 2 January, and another was seen by Allen Bryan at Cape Hatteras point, N.C., on 27 December.

EARED GREBE: An excellent inland find was two observed by Tom Howard at Woodlake, near Vass, N.C., during the Southern Pines CBC on 18 December.

NORTHERN GANNET: Greg Massey and Maurice Barnhill noted 1200+ at Corncake Inlet, N.C., near Fort Fisher, on 23 December.

AMERICAN WHITE PELICAN: One that was present during the fall at Hatteras Inlet, N.C., was seen as late as 29 December by many observers. Another was seen by Ross Earnest, John Fussell, and Henry Haberyan at Atlantic Beach, N.C., on 10 December.

GREAT CORMORANT: One or two were seen much of the winter at Huntington Beach State Park, S.C., by numerous observers, and two were on the CBC there on 27 December (Dennis Forsythe). Perry Nugent and Julia Hill picked out three immatures in flight amid large flocks of Double-crested Cormorants on 2 January at Folly Beach, S.C. One seen at Radio Island near Morehead City, N.C., on 1 February (John Fussell et al.) was likely the same individual seen there in November and December.

DOUBLE-CRESTED CORMORANT: Large numbers were again seen on Jordan Lake this winter (fide Bill Wagner). At inland sites where they are seldom found in winter, two were seen on the Catawba River near Charlotte, N.C., on 29 December and one was there 2 days later (Paul Hart, Heathy Walker); eight were at Blewett Falls Lake, N.C., on 23 December (Douglas McNair); one was at Lake Hartwell near Townville, S.C., on 18 December (Sidney Gauthreaux, Mike Lennartz); and six were noted at the Savannah River Plant, S.C., on 21 December (Anne Waters).

AMERICAN BITTERN: Unusual for the piedmont in winter was one seen regularly at Winston-Salem, N.C., from 1 December to mid-January by Charles Frost, Barbara Page, and Ramona Snavely.

GREAT BLUE HERON: One seen at Montreat, N.C., was the first on the Buncombe County CBC in at least 15 years (Andrew Brown, Jim Nave). Another at nearby Fairview was notable on 20 January, as seen by Ruth and Jerry Young.

GREAT EGRET: Robert Hader observed a late egret at Lake Benson, near Raleigh, N.C., on 3 and 8 December.

CATTLE EGRET: Rather rare for the South Carolina coast in winter were several seen

by Dennis Forsythe at a landfill in Charleston County during December and January.

GREEN-BACKED HERON: North of the winter range were individuals in North Carolina at Wanchese on 28 December (Harry Armistead party), along the Deep River in Chatham County on 31 December (Barbara Roth), and at Fort Bragg in Cumberland County on 6 January (Philip and Jim Crutchfield).

YELLOW-CROWNED NIGHT-HERON: Gary Williamson observed one on 27 December at dawn on the steps of a motel in Hatteras, N.C.

GLOSSY IBIS: Allen Bryan noted four along the North River near Beaufort, N.C., on the Morehead City CBC on 18 December.

WOOD STORK: Late in departing were two seen at a golf course at Myrtle Beach, S.C., from 26 November to 3 December, fide Kate Brethwaite.

TUNDRA SWAN: Extralimital records in South Carolina included one at a pond near Elgin, Kershaw County, on 24 December (Charlie Wooten) and 12 at Santee National Wildlife Refuge on Lake Marion on 12 February (Sidney Gauthreaux et al.). Outside the usual range in North Carolina were two near Durham on 18 December (fide Mike Schultz), two near Fayetteville on 17 January (Philip Crutchfield), and eight at Sunset Beach on 29 January (Crutchfield et al.). Harry LeGrand saw 150, an excellent inland total, in Northampton County, N.C., on the Roanoke Rapids CBC on 1 January.

GREATER WHITE-FRONTED GOOSE: Sidney Gauthreaux and party observed three adults at Santee refuge, S.C., on 12 February.

SNOW GOOSE: Two blue-phase geese were seen at Pontiac, Richland County, S.C., from 24 December to 25 March by Charlie Wooten. A white-phase bird was noted by Douglas McNair at the McKinney Fish Hatchery in Richmond County, N.C., on 24 December.

NORTHERN PINTAIL: Ron Warner saw three on 4 January at Hendersonville, N.C., for a rather rare mountain report.

BLUE-WINGED TEAL: Quite late were two seen on the Durham, N.C., CBC on 18 December (fide Mike Schultz).

GADWALL: In the mountains, Ron Warner saw two at Hendersonville, N.C., on 9 December, and Ruth and Jerry Young observed three near Asheville, N.C., on 18 December.

EURASIAN WIGEON: Philip Crutchfield and others observed a male at Sunset Beach, N.C., on 29 January, and another male was seen by many observers all winter at Santee National Wildlife Refuge (fide Perry Nugent).

CANVASBACK: Normally very rare in midwinter at Clemson, S.C., up to six were seen there by Charlie Wooten from mid-December to late January.

GREATER SCAUP: Inland were five seen on the Winston-Salem, N.C., CBC on 31 December (Royce Hough, Fred Hill, Hop Hopkins) and six observed at Falls Lake near Durham on 29 January (Harry LeGrand).

HARLEQUIN DUCK: An outstanding count for the Carolinas was two males and three females seen by Charlie and Stephanie Lyon on 22 January at a fishing pier in

Rodanthe, N.C.

COMMON EIDER: Very rare was an adult male seen by Mike Tove and others at Hatteras Inlet, N.C., from 27 to 29 December, and it was still present on 25 February, as noted by Ricky Davis.

KING EIDER: Mike Tove and Carl Perry observed an immature male at Oregon Inlet, N.C., on the Bodie-Pea Island CBC on 28 December.

OLDSQUAW: Rare inland was a female seen at a farm pond in northern Wake County, N.C., on 15 January by Harry LeGrand.

COMMON GOLDENEYE: In addition to a number of birds on lakes in northern North Carolina, where the species is not rare, were three others seen inland: one on the Pee Dee River below Blewett Falls Lake dam, N.C., on 22 December (Douglas McNair) and two near Townville, S.C., on 8 January (Sidney Gauthreaux et al.).

COMMON MERGANSER: Excellent counts were 32 on the Jordan Lake CBC on 1 January (Angelo Capparella et al.) and 21 at Roanoke Rapids Lake, N.C., on 2 January (Merrill Lynch, Karen Masson). Others seen were two on the Winston-Salem CBC on 31 December (many observers, fide Ramona Snavelly); one on the Charlotte, N.C., CBC on 31 December (Paul Hart, Heathy Walker); three near Townville, S.C., on 8 January (Sidney Gauthreaux et al.); and one at Huntington Beach State Park, S.C., on 26 January (Phyllis and Mitch Feller).

RED-BREASTED MERGANSER: A good winter count inland was 14 on the Jordan Lake CBC on 1 January, as noted by the Angelo Capparella party.

BLACK VULTURE: Notable for the mountains were individuals seen at Asheville, N.C., by Ruth and Jerry Young on 18 and 31 December and 25 February, and four seen by Douglas McNair at Table Rock Mountain (elevation 3100 feet) in northern Pickens County, S.C., on 15 February. A good count for the Fayetteville, N.C., area was seven noted by Philip Crutchfield on 13 February.

TURKEY VULTURE: Douglas McNair saw one or two at Black Balsam Knob (elevation 6200 feet) in the Balsam Mountains, N.C., on 19 February, a seemingly early date for such a high elevation.

OSPREY: One was very late on the Raleigh CBC on 17 December, fide Robert Hader.

BALD EAGLE: Noteworthy away from the coast were one seen by Tom Howard near Vass, N.C., on 18 December, three seen at Jordan Lake on the Chapel Hill CBC on 26 December by Ricky Davis and Tony Shrimpton, and one seen by Douglas McNair at Lake Jocassee, S.C., on 18 February.

ROUGH-LEGGED HAWK: Excellently described was a light-phase bird near Kings Mountain, N.C., as observed by David Wright and Paul Hart on 8 January.

PEREGRINE FALCON: Ron Warner noted an adult at Fairview in Buncombe County, N.C., on 19 January. Another was found injured near Winston-Salem on 27 January; it was taken to Cornell University in New York for treatment, according to Ramona Snavelly.

YELLOW RAIL: Though within the winter range, a Yellow Rail flushed by Tom Reeves at Magnolia Gardens near Charleston on 27 January was an excellent find.

SANDHILL CRANE: Three were seen flying south over Highlands, N.C., during

"Thanksgiving week" by a local observer, according to Douglas McNair.

LESSER GOLDEN-PLOVER: Seldom seen in winter was one discovered by Ron Warner at Fort Moultrie, Sullivans Island, S.C., on 27 January and observed by many Carolina Bird Club members on that day and the next. The bird still retained some black on the belly; it was feeding in short grass near rain pools.

PIPING PLOVER: Though positive nesting was discovered at Sunset Beach, N.C., in 1983, Dick Price provided additional breeding season records for this area: two seen on 3 June 1981, one seen on 31 May 1982, and two seen on 29 May 1983.

GREATER YELLOWLEGS: A late individual was seen on the Durham CBC on 18 December, according to Mike Schultz.

SPOTTED SANDPIPER: Notable in winter in North Carolina were one seen at Tar River Reservoir near Rocky Mount on 2 January (Lou Fink) and another noted at Harkers Island during January (Skip Prange).

WHIMBREL: A good midwinter count of three, to possibly five, was noted by John Fussell and Ross Earnest on Shackleford Banks, N.C., on 29 January.

LONG-BILLED CURLEW: Always a good find, a remarkable five were seen on Cape Island, S.C., on 29 January, fide Dennis Forsythe. One was observed by Dana Beach in late January at Folly Beach, S.C.

MARBLED GODWIT: Allen Bryan and party observed 37 on the North River on the Morehead City CBC on 18 December.

WESTERN SANDPIPER: Notable in winter away from the coast were two seen by Allen Bryan near the Gull Rock Game Lands on mainland Hyde County, N.C., on 30 December.

LEAST SANDPIPER: Tom Howard observed one in flight at Woodlake, near Vass, on the late date of 18 December.

PURPLE SANDPIPER: A good count for Sullivans Island, S.C., was 61 on 28 January (Sidney Gauthreaux et al.). These birds probably forage on the jetties at Charleston harbor at low tide and roost on this island at high tide.

LONG-BILLED DOWITCHER: Extremely unusual were two at a farm pond near Raleigh in late November, as seen by Jeff Walters. One remained to 17 December (Robert Hader, John Fussell). Another was seen by Ricky Davis on 25 February at Pea Island; though the species presumably winters there, most reports are in December.

RED PHALAROPE: A good winter count was 445, noted by Dennis Forsythe off Charleston on 19 February.

POMARINE JAEGER: John Fussell observed one in Pamlico Sound, N.C., on the Cedar Island-Ocracoke ferry on 26 December. Dennis Forsythe noted one, plus two unidentified jaegers, off Charleston on 19 February.

PARASITIC JAEGER: Notable for midwinter was one seen by John Fussell and Ross Earnest at Cape Lookout, N.C., on 29 January.

LAUGHING GULL: Approximately 15,000 were seen in the Morehead City area on 21 December by John Fussell.

LITTLE GULL: One was seen by Grayson Pearce at Bodie Island, N.C., on 28

December for the only report of the winter.

BONAPARTE'S GULL: Noteworthy inland totals were 400 at Blewett Falls Lake, N.C., on 22 December, with 80 on the following day (Douglas McNair); 105 on the Clemson, S.C., CBC on 18 December (fide Paul Hamel) and 50 in that area on 9 January (McNair); 31 on the Durham CBC on 18 December (fide Mike Schultz); and 15 on the Southern Pines, N.C., CBC on 18 December (Tom Howard).

GULLS AT HATTERAS INLET, N.C.: A very sharp cold snap from 24 to 26 December produced a major kill of menhaden in the area of Hatteras Inlet. Approximately 650,000 gulls were observed there from 26 to 29 December by Mike Tove, Harry LeGrand, Allen Bryan, John Wright, and others; an excellent 12 species of gulls were identified. At least 500,000 Ring-billeds and at least 100,000 Herrings were present.

RING-BILLED GULL: This species has now become quite common at many inland lakes and landfills. Excellent counts were 5000 in mid-January at a landfill in Lexington County, S.C. (Steve Compton); 2500 at Beaverdam Reservoir in northern Wake County, N.C., on 8 January (Harry LeGrand); "abundant" all winter on Lake Hickory, N.C. (Derek Carrigan); and 1000 at a landfill near Raleigh on 16 February (Robert Hader).

COMMON BLACK-HEADED GULL: Harry LeGrand and Mike Tove observed a first-winter individual at Hatteras Inlet on 26 December, and one (or the same) was noted the next day in a harbor at nearby Hatteras by Harry Armistead and Julie Cristol. Another was seen for the second consecutive winter at a sewage plant near Carolina Beach, N.C.; Greg Massey saw it from January to late February.

HERRING GULL: Inland counts of note were 34 on the Jordan Lake CBC on 1 January (fide Barbara Roth) and 12 (including 10 adults) at Blewett Falls Lake on 25 December (Douglas McNair).

ICELAND GULL: At Hatteras Inlet, Mike Tove, Harry LeGrand, Allen Bryan, and John Wright observed an adult and a first-winter bird on 26 December. John Fussell saw a first-winter immature at a landfill near Newport, N.C., from 13 to 21 January and a different bird there on 4 February. Fussell also had an immature at Ocracoke, N.C., on 12 February.

LESSER BLACK-BACKED GULL: A national record CBC total was the 15 tallied on the Cape Hatteras count on 27 December. Most were seen by Mike Tove at Hatteras Inlet. John Fussell saw one in Pamlico Sound near Ocracoke Inlet, N.C., on 26 December, and he observed an adult and a second-winter bird at the Newport, N.C., landfill from 25 to 28 February.

GLAUCOUS GULL: Quite rare was an adult, seen by Ruth and Jerry Young, at Hatteras Inlet on 24 December. An adult, possibly the same bird, was there on 29 December, along with at least three immatures (Harry LeGrand et al.). Another was at this inlet on 25 February (Ricky Davis); surprisingly, there were no winter reports away from this inlet.

BLACK-LEGGED KITTIWAKE: An outstanding count from shore was 46, including 16 adults, noted at Cape Lookout, N.C., on 29 January by John Fussell and Ross Earnest. Others seen were four at Atlantic Beach, N.C., on 22 December (Fussell);

singles in the Hatteras Inlet area on 25 December (Ruth and Jerry Young) and 26 December (Harry LeGrand, Mike Tove); one at Myrtle Beach, S.C., on 27 February (Dave Sibley, Ray Schwartz); and a dead kittiwake found at Huntington Beach State Park, S.C., on 27 December and given to the Charleston Museum by Dennis Forsythe and David Chamberlain.

CASPIAN TERN: Four on the Morehead City CBC on 18 December (fide John Fussell) were somewhat north of their winter range. One remained to 21 December (Fussell).

DOVEKIE: Most unusual was one found on a road in Buxton, N.C., on 23 December, fide Carl Perry.

ALCID (SP.?): A large alcid was seen a few miles off Hatteras Inlet on 27 December by Carl Perry, and two large alcids were seen by Lloyd Davidson 5 miles S of Beaufort Inlet, N.C., in February.

GREAT HORNED OWL: An excellent total of 33 were heard on the Roanoke Rapids CBC on 1 January by Merrill Lynch and others.

SHORT-EARED OWL: Rare inland were two seen during the middle of the day at Occoneechee Neck on the Roanoke Rapids CBC on 1 January by Mike Tove and Derb Carter.

WHIP-POOR-WILL: Michael Dunn saw one along the side of a road in Carolina Beach State Park, N.C., on 10 January.

VERMILION FLYCATCHER: An outstanding find was a male seen on a wire along US 17 in Colleton County, S.C., on 5 January by Marion Hines. She observed the bright red underparts and the dark mask and upperparts.

GREAT CRESTED FLYCATCHER: One of the few winter records for North Carolina was one carefully studied by Allen Bryan at Beaufort on 18 December. Ricky Davis, Wayne Irvin, and Harry LeGrand studied it later in the day and agreed with the initial identification.

WESTERN KINGBIRD: Dennis Forsythe and party observed a late individual on the McClellanville, S.C., CBC on 18 December.

HORNED LARK: A good count was 160, including a partial albino, at the Laurinburg-Maxton, N.C., airfield, as seen by Douglas McNair on 21 December.

BARN SWALLOW: An individual on 28 January was very rare near McClellanville, S.C., as noted by Steve Compton.

FISH CROW: Frank Enders noted three on the Roanoke Rapids CBC on 1 January, and Merrill Lynch had two at nearby Jackson on 4 January. Gail Whitehurst noted a large flock at Raleigh on the early date of 30 January. Far inland in South Carolina, Douglas McNair had one at Six Mile on 5 December and one at Clemson on 6 January. There were numerous inland records for mid-February, marking the arrival of summering birds.

BROWN-HEADED NUTHATCH: Ruth and Jerry Young reported several wintering at Lake James and on the UNC-Asheville campus in western North Carolina.

MARSH WREN: One was scarce inland in winter near Fayetteville on 13 February and again in early March (Philip Crutchfield).

- BLUE-GRAY GNATCATCHER:** Perhaps a late fall lingerer was one seen by Ricky Davis near Newport on 18 December. Good for mid-winter was one seen near Calabash, N.C., on 29 January by Philip Crutchfield.
- WHITE-EYED VIREO:** Two were seen on the Cape Hatteras CBC on 27 December by Paul Sykes, Gary Williamson, and Harry LeGrand; and Ricky Davis had one on the Morehead City CBC on 18 December.
- SOLITARY VIREO:** An excellent CBC total was the 11 vireos tallied on the Cape Hatteras count on 27 December (fide Carl Perry). Between 15 and 31 December, single birds were seen in the western part of the Carolinas at Crowders Mountain State Park (Paul Hart) and Gastonia (Hart) in North Carolina and at Six Mile (Douglas McNair) and Clemson (Charlie Wooten) in South Carolina.
- ORANGE-CROWNED WARBLER:** Rare well inland in winter were one on the Clemson CBC on 18 December (Paul Hamel), one on 10 January near Durham (Marc Eisdorfer), and one or two in yards at Fayetteville from 17 January to later in the season (Philip Crutchfield et al.).
- NASHVILLE WARBLER:** Very late was an individual seen by Sidney Gauthreaux and Charlie Wooten near Townville, S.C., on 27 November.
- CAPE MAY WARBLER:** One was seen in a mixed-species flock near Newport on the Morehead City CBC by Ricky Davis on 18 December. At a feeder was one in Kathleen Mallard's yard in Sumter, S.C., from 14 January into February, fide Evelyn Dabbs.
- BLACK-THROATED GREEN WARBLER:** Most unusual in winter was one seen at Buxton, N.C., on 27 December by Harry LeGrand.
- PRAIRIE WARBLER:** An excellent winter count of six was noted by Ron Warner at the S.C. Visitor Center in southern Jasper County on 3 January.
- BLACK-AND-WHITE WARBLER:** Rather late lingering birds were seen at Raleigh on 11 December by Robert Hader, at Buxton on 27 December by Paul Sykes and Gary Williamson, and at Lake Mattamuskeet on 30 December by John Wright, who saw two warblers.
- OVENBIRD:** In woods near Buxton, Paul Sykes and Gary Williamson saw one on 27 December, and another (or the same) was there on 1 and 2 January, fide Carl Perry.
- YELLOW-BREASTED CHAT:** Allen Bryan observed two on the Raleigh CBC on 17 December, the only report for the winter.
- INDIGO BUNTING:** One in "mottled" plumage was seen at a feeder near Raleigh during the winter by Elizabeth Albritton, fide Robert Hader. Another was observed feeding on a lawn in Frisco, on the Cape Hatteras CBC, on 27 December by John Fussell and Carl Perry.
- PAINTED BUNTING:** Though considerably more numerous in winter than the previous species, individuals were nonetheless rare at feeders at Straits in Carteret County, N.C., from mid-December to 8 January (a female or immature seen by Carolyn Hoss) and at St. Charles in Lee County, S.C., from 10 January into February (an adult male seen by Drayton Cooper).

DICKCISSEL: Derek Carrigan had one visit his feeder in Granite Falls, N.C., for a week in October.

BACHMAN'S SPARROW: Undoubtedly on their wintering grounds were one in western Fort Bragg, Hoke County, N.C., on 18 December, and three in the Sandhills Game Land in northern Scotland County, N.C., on 1 February, as seen by Jay Carter.

AMERICAN TREE SPARROW: Ricky Davis discovered one at Falls Lake, in southern Granville County, on 11 December; and he found a second bird (probably) a few miles to the west in Durham County, at the same lake, from 5 to 16 February. This second bird was carefully studied by several observers.

VESPER SPARROW: Rare for the North Carolina piedmont in winter were several noted in early winter, at least to 6 January, near Kings Mountain by Clare and Heathy Walker.

LARK SPARROW: Most unusual was one seen and described well near Kings Mountain on 6 January by Clare and Heathy Walker.

SAVANNAH (IPSWICH) SPARROW: A good South Carolina count was six, as noted by Dennis Forsythe and David Chamberlain at Huntington Beach State Park on 27 December.

WHITE-CROWNED SPARROW: Scarce on the Outer Banks in winter was one seen in Hatteras on 27 December by Harry Armistead.

LAPLAND LONGSPUR: Though the species occurs regularly in winter in the Clemson area, one noted by Sidney Gauthreaux and Mike Lennartz near Townville on 18 December was a first for the Clemson CBC. Douglas McNair found three or four at the Laurinburg-Maxton, N.C., airfield on 21 December and three at Mangum, Richmond County, N.C., on 25 December. Three were found at their usual wintering spot on Oconeechee Neck during the Roanoke Rapids CBC on 1 January by Harry LeGrand et al.

SNOW BUNTING: The only coastal report was of two seen on several dates from 18 December to 7 January at Fort Macon State Park, N.C., by John Fussell.

RUSTY BLACKBIRD: Notable for the mountains were 10 seen by Ron Warner in Hendersonville, N.C., on 14 February.

BREWER'S BLACKBIRD: Seldom found in eastern North Carolina was one, a male, seen at First Colony Farms near Cherry, Washington County, N.C., on 26 February by Ricky Davis.

NORTHERN (BULLOCK'S) ORIOLE: A male was seen at a feeder in Raleigh on 19 December by Michael Beggs. Ironically, he saw another (or the same) bird at his feeder the previous winter, though he was living in another part of the city! A female or immature was seen at a Fayetteville feeder on 14 January and later dates by Ruth Chesnutt and others.

HOUSE FINCH: Numbers in winter continue to increase in the Carolinas, with a remarkable 924 having been banded by Bill Hilton Jr. at York, S.C., between late October and 10 March.

RED CROSSBILL: Though both Pine Siskins and Evening Grosbeaks wintered in fairly

good numbers this winter, the only crossbill report was one Red near Cashiers, N.C., on 8 January (Douglas McNair). Despite their having been common in the fall at nearby Highlands, McNair was unable to find any Red Crossbills in that town in the winter.

CBC ROUNDTABLE

(Continued from Page 72)

pecking at the driveway long enough to eat more gravel than they could have lifted off the ground.'

"So we are still wondering what the warblers found so attractive on lawns and driveways. Although the eyes of such birds are better suited than are man's to detect and identify tiny objects at close range, it seems scarcely possible that the warblers are able to recognize and devour morsels too small for Mrs. Parsons to see through her magnifying glass."

John V. Dennis (*A Complete Guide to Bird Feeding*, Knopf, 1980) recommends providing both grit (preferably seashore sand or ground oyster shells) and eggshells at feeding stations, the former for use primarily as a grinding agent and the latter for the calcium content. He points out, however, that several kinds of grit are useful sources of minerals. Dennis notes that supplying grit is especially important when the ground is covered with snow. Desperate for grit, birds sometimes peck at the crumbling mortar of old brick buildings and congregate dangerously close to highways where narrow strips of ground have been cleared during snow removal.

Although there now seems to be convincing evidence that warblers frequently peck grit, their bills do not appear to be well adapted for the process. Perhaps the birds Mrs. Parsons observed remained capable of flight because they were successful in only a few of their many attempts. On sandy Hilton Head Island, birds suffer no shortage of grit, so the warblers' regular consumption of Mrs. Chapin's eggshells should be primarily for the mineral content. After receiving her letter, I put out eggshells, but my birds have not yet developed a taste for them.—ELOISE F. POTTER, Route 3, Box 114 AA, Zebulon, N.C. 27597

NEW PERIODICAL

NEW JOURNAL: *WingTips*, quarterly; Helen S. Lapham, editor and publisher, Box 226, Lansing, N.Y. 14882; subscription price \$8 per year (guaranteed rate for first 3 years to charter subscribers). Sample copy of first issue will be sent free upon request.



MEMBERSHIP

Carolina Bird Club, Inc., is a non-profit educational and scientific association founded in March 1937 and open to anyone interested in the study and conservation of wildlife, particularly birds. Dues, contributions, and bequests to the club are deductible from state and federal income and estate taxes. Checks should be made payable to Carolina Bird Club, Inc., and sent to CBC Headquarters, P.O. Box 2764, Raleigh, N.C. 27611.

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All CBC members not in arrears for dues receive *The Chat*, a quarterly journal devoted to bird study and conservation, and the *CBC Newsletter*, which carries information about meetings, field trips, and club projects. Articles intended for publication in *Chat* may be sent to the Editor or to the appropriate department editor listed in a recent issue of the bulletin. Items for the *Newsletter* should be sent to its Editor, Clyde Smith, 2615 Wells Avenue, Raleigh, N.C. 27608. Correspondence regarding memberships, changes of address, or requests for back numbers of either publication should be sent to CBC Headquarters, P.O. Box 27647, Raleigh, N.C. 27611.

OFFICERS

President ... George W. Morgan, 209 Avalon Rd., SW, Winston-Salem, N.C. 27104

Vice-presidents:

Robert J. Hader, 3313 Cheswick Dr., Raleigh, N.C. 27609

Teddy M. Shuler, Route 1, Box 15, Seneca, S.C. 29678

Ron Warner, P.O. Box 128, Bat Cave, N.C. 28710

Secretary Philip Crutchfield, 901 Montclair Rd., Fayetteville, N.C. 28304

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The Chat

(USPS 101-020)

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The Ornithological Society of the Carolinas
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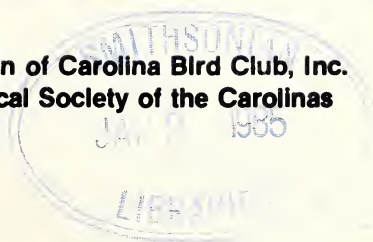
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The Chat

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Editor	Eloise F. Potter, Route 3, Box 114 AA, Zebulon, N.C. 27597
General Field Notes	David S. Lee, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—Jerry Young documented the first active Alder Flycatcher nest found in North Carolina with photographs of the sitting bird and of the nest with eggs. For further details, see his field note on page 93. (Cover photo © Jerry Young)

Second Supplement to the 1978 Checklist of North Carolina Birds

In 1978 the North Carolina State Bird Records Committee issued a checklist of the state's birds (Parnell et al. 1978, CBC and N.C. State Museum). In 1980 I prepared a supplement to the list (Chat 60:59-61) addressing 66 changes in status, additions, and other supplemental information. Since that time, a considerable number of new records have appeared, and it seems advisable to update our list again. In so doing, we inadvertently encounter new interpretative problems for our criteria for admission to the list (see Chat 32:26, 38:70, and 41:93). These changes are also included. In that the Provisional II category was developed as a catch-all for problem species, we have segregated these birds into several groups to better illustrate reasons for inclusion. Additionally, recent name changes by the American Ornithologists' Union affected many North Carolina birds, and it now seems advisable to totally revise the 1978 list. Because preparation and publication of this list is sometime off, the committee hopes that this supplement, in the interim, will serve those who are concerned with these matters.

Presently 429 species of birds have been recognized as occurring in North Carolina and its adjacent offshore waters. Forty-six of these are considered as provisional and 70 are not documented by existing specimens or recognizable photographs. At least 193 species are now known to nest in the state, and about 75 additional ones are frequent winter visitors.

Catalogued photographic bird records, mostly in the form of 35 mm slides, are maintained at the North Carolina State Museum. These photographs are regarded as part of the scientific collection of the museum and are not available for general use. Persons wishing to contribute to this collection are encouraged to do so. We are interested in photographs not only of rare birds but also of ones encountered at unusual locations or seasons. Of equal importance is the photographic documentation of descriptive plumages—which will enable investigators to determine age, sex, or stage of molt—and of nesting by North Carolina's avifauna. Even for the most common species, often particularly for the most common species, we have little information on nest biology (place, egg dates, period of incubation, period of dependence, and appearance and development of young). All photographs should be accompanied by the following information: name of photographer and donor, date, and geographic location (county and distance from nearest place recognized on most maps). Other information on habitat, elevation, behavior, and so forth is encouraged but not mandatory. Birds should be recognizable, but otherwise the quality of the photograph is not of particular importance. Persons making donations will be acknowledged and informed of the permanent catalogue number of the photograph. If requested, copies will be made of 35 mm slides and originals returned to the donors. A list of contributors will appear periodically in *The Chat*.

Additions to the Official List (including species for which the status has been upgraded since 1980), which now represents 385 species:

Masked Booby [Amer. Birds 37:117-118, Chat 48:29-40, photograph, and specimen NCSM 9538]

Mute Swan [photograph NCSM]
 Bar-tailed Godwit [Chat 47:71-72]
 Black-tailed Godwit [Chat 45:13-14, photograph]
 Wilson's Phalarope [specimen USNM 230821]
 Baird's Sandpiper [specimen USNM 301948]
 Lesser Black-backed Gull [specimen NCSM 8195]
 Great Skua [specimen NCSM 8171]
 Passenger Pigeon [specimen USNM 169185]
 Willow Flycatcher [matching voice and skin specimens NCSM 9461]
 Alder Flycatcher [voice specimen NCSM]
 Northern Shrike [The specimen reported in *Birds of North Carolina* is located at the Field Museum (FM 162444).]
 Common Redpoll [specimen NCSM 8190]
 Lapland Longspur [specimen USNM 338117]
 Smith's Longspur [Chat 45:46, specimen NCSM 9804]
 Snow Bunting [specimens NCSM 7818 and 7844-47; USNM 417986 and 358527-9]

Additions to Provisional I list (original Provisional I list in Chat 44:59-61 not repeated):

Brown Booby [additional records in Chat 48:29-40]
 Swainson's Hawk [one additional record in Chat 46:80-81]
 Thayer's Gull [Chat 37:50, see below]
 Mew Gull [Chat 45:75-76, see below]
 Iceland Gull [Chat 46:57-71, see below]

Many of our gulls provide extremely difficult identification problems. Although Iceland Gulls are reasonably well documented with photographs and good detailed descriptions, we concluded that, for consistency and elimination of future interpretative problems, specimens are necessary to elevate these birds from Provisional status. Identification problems encountered by other states with these and similarly appearing gulls make this decision, although unpopular, seem advisable.

Band-tailed Pigeon [Chat 44:106]
 Vermilion Flycatcher [Chat 45:45]
 Kirtland's Warbler

Although this species was recognized in the *Birds of North Carolina* as occurring in the state, there are few supporting details, and all the observations were made by one person. Kirtland's Warbler was not placed in Provisional II status, however, because Brimley knew the observer personally and presumably had adequate unpublished evidence for including it on the state's list.

Northern Wheatear [Chat 46:82-83]

Provisional II, three subcategories as follows:

A. Problems are caused by records of occurrence resulting from possible escape of captive birds. In most cases documentation is well established through specimens, photograph records, or cumulative descriptive sight records.

American Flamingo [Birds of North Carolina, photograph]

Masked Duck [Chat 46:112-113, photograph]

Black-bellied Whistling-Duck [Chat 45:41-42, specimen]

Barnacle Goose [Birds of North Carolina]

Ruddy Shelduck [Birds of North Carolina]

Falcated Teal [Chat 42:58, specimen]

Baikal Teal [Chat 26:30]

Garganey Teal [Chat 21:68 and 80]

Mandarin Duck [Chat 38:70]

Barrow's Goldeneye [Chat 35:45-49]

Ringed Turtle Dove [specimen]

Monk Parakeet [specimen]

Nanday Conure [Chat 46:43-44]

Budgerigar [specimen]

Smooth-billed Ani [Birds of North Carolina]

B. Potential confusion results from problems of species complexes that are extremely difficult to identify in the field. In most cases authors recognized this problem and placed tentative statements in their published field descriptions.

Black-browed Albatross [Birding 4:6, Amer. Birds 27:739-740; see below]

Yellow-nosed Albatross [Chat 43:79, Amer. Birds 33:720]

We do not question that albatrosses occur off North Carolina; we are concerned only with criteria for specific identity. In fact, the genus *Diomedea* qualifies for Provisional I status.

Little Shearwater [Chat 43:79-80]

Difficulties in field identification of small "black-and-white" shearwaters and the fact that the published identification provided was only tentative warrant that this species remain in the Provisional II category until additional records become available.

Ivory Gull [Chat 44(4):105-106]

Known variation, and difficulties in field identification of gulls in general, and the tentative identification in the published account warrant that this bird remain on Provisional II status.

Rufous Hummingbird

Although the genus *Selasphorus* definitely occurs in the state and technically qualifies for Provisional I status, the specific identity of birds seen remains in question.

C. Problems are caused by lack of good documentation in appropriate literature.

Arctic Loon [Amer. Birds 28:626]

Common Shelduck [Amer. Birds 26:845]

White-faced Ibis [Amer. Birds 31:979]

Eskimo Curlew [Chat 39:35-36; North Carolina Historical Review LX(2), April

1984, 137-170.]

Spotted Redshank [A Gathering of Shorebirds, H. M. Hall, edited and with additions by R. C. Clement, Devin-Adair Co., New York, 1960, p. 231-232]

Black-throated Gray Warbler [Chat 30:18, 24]

Green-tailed Towhee [Amer. Birds 30:53-54]

White Wagtail [Chat 46(4):121]

Species for which specimens are not available are listed below. For some of these (marked "p") photographic records are available. All species on Provisional I and II list, except as noted for possible escapes, are by definition also in this category, but not relisted.

Western Grebe¹

Great Cormorant (p)

Reddish Egret (p)

Roseate Spoonbill

Mute Swan (p)

Ross' Goose (p)

Cinnamon Teal

Common Eider (p)

Mississippi Kite

Northern Goshawk

Rough-legged Hawk

Bar-tailed Godwit (p)

Black-tailed Godwit (p)

Long-billed Curlew (p)

Ruff (p)

Common Black-headed Gull (p)

Little Gull

Sabine's Gull (p)

Carolina Parakeet

Ivory-billed Woodpecker

Gray Kingbird

Olive-sided Flycatcher

Sprague's Pipit

Black-headed Grosbeak (p)

Pine Grosbeak

Lark Bunting (p)

Lark Sparrow (p)

Harris' Sparrow

Record Committee Members are: Tom Howard, Wayne Irvin, Dave Lee, Harry LeGrand, Chris Marsh, Jim Parnell, and Eloise Potter. I thank Gil Grant and Peter Getman for assistance in locating specimens in other museums.

DAVID S. LEE

Chairman North Carolina Records Committee

9 February 1984

¹The future splitting of Western Grebes into two distinct species is likely. Additional sight records with details are needed.

Backyard Birding

... with Gail T. Whitehurst

Far Out!

In the late forenoon of 14 July, I observed a male Prothonotary Warbler at my suet feeder. Later in the afternoon the bird returned to the area, where he behaved aggressively territorial, repeatedly driving off Gray Catbirds, Northern Cardinals, and Carolina Chickadees. He also investigated around the eaves of the garage, acting very much like a nest-seeking Carolina Wren. Apparently he did not like the location, for he has not returned as I write this, 4 days later. I should add that I live in a residential neighborhood in Durham; my property is backed by a small wooded area containing a very small wet-weather stream.—OLIVER W. FERGUSON, 1212 Arnette Avenue, Durham, N.C. 27707

How Did They Know?

Our “regular” group of House Finches began gathering at the feeders on 31 October 1983. So I rushed right out and hung up two thistle feeders. There were about 12 finches that day. We think that these were some of our winter “regulars” from years before, because they seemed to know all about the location of the various feeders. By 1 March 1984, our dozen House Finches had grown to about 300, the best we could determine. They consumed thistleseed and oil sunflower seed by the gallon.

During the day-time hours of 28 March, approximately 90% of *all* our birds, both local and winter migrants, left us. We could not understand the sudden departure. But the next day, we knew: During the night of 28 March, several tornadoes hit Nash County, with three or four in our immediate neighborhood.

My sister and I were blessed with no damage to our home or barns. We took refuge under our old-timey heavy oak dining table, which we had pushed into a small hall in the middle of the house. We heard the roar and the whistling as the tornado passed over us.

The next day, we had only a few local birds at the feeders. The House Finches, Pine Siskins, and grosbeaks did not return. I feel that our birds could sense in some way that the tornadoes were coming. During April we had a few winter visitors that came through on their way north.

Then in May and June, we were delighted to see three adult pairs of House Finches feeding their fledglings at the sunflower feeders. They did not go to the thistle feeders, so these adults could not have been any of our “regular” ones. I must say that the young ones

are noisier and more demanding for food than even the young of the Northern Cardinal or Blue Jay. We think that each of the three adult pairs have had two nestings—anyway, we have 18 or 20 House Finches flitting here and there over the yard.

Now, we wonder, will this little flock stay here through the fall and winter and then breed here in the spring? We have enjoyed hearing them this summer, murmuring and twittering in the trees, and watching a whole family at the bird bath. House Finches seem to be everywhere—all over the place—and eating like it is winter time.—BEVERLIE JOYNER, 1101 Old Mill Road, Rocky Mount, N.C. 27801

More on House Finches

For good or ill, there is no question about it. Our part of the United States has been invaded by a bunch of Westerners—House Finches, that is. From scattered groups of winter visitors some years ago, which excited local birders, the House Finch now has become established as a breeding bird in many locations in the Carolinas. Some folks say that these birds will become as common and pesky as House Sparrows before long. One thing that they have, from a birdwatcher's point of view, is color and song. Whatever your point of view, the species appears to be here to stay.

We have House Finches at winter feeders and see them in the spring and summer, often with young in tow. We have never been so fortunate as to find a nest in the area. However, this summer we were told of a nest site that was quite interesting. A young graduate student at N. C. State University lives in a sub-division in northwest Raleigh. He discovered the nest of a House Finch, in a hanging basket of ferns, right outside his front door. He and his wife watched the progress as much as possible. On 12 June three eggs hatched and the following day, the last two. The young birds fledged some 2 weeks later, although the couple were not present at the time. Examining the empty nest, they found it to be lined with white hairs. They have a white cat, which always stays indoors. They surmised that cat hairs, picked up on their own shoes and deposited on the porch, were the ones used by the birds.

We have noted that House Finches may be seen and heard in almost any part of Raleigh these days, even downtown on Fayetteville Street Mall. As the cigarette commercial used to say, "You've come a long way, baby" from a small flock seen in Zebulon and the wintering ones, which we used to make special trips to see, in the Raleigh Rose Garden.—GAIL T. WHITEHURST, 1505 Brooks Avenue, Raleigh, N.C. 27607

Department Editor's Change of Address

As this issue of *The Chat* goes to press, Gail Whitehurst and her husband, Carl, are in the process of moving from Raleigh to Asheville. Their new address is 52 Lakeshore Drive, Asheville, N.C. 28801. Although their many friends in Raleigh will miss Gail and Carl, we are looking forward to reading her reports in *The Chat* about the birds in their new back yard.—EFP



Roundtable

... with Louis C. Fink

Gluttony

In July an immature Red-shouldered Hawk (*Buteo lineatus*) was brought in to Riverbanks Zoo in Columbia, S.C. Upon examination, the bird was seen to be extremely emaciated, but suffered no other injuries.

The bird was fed and a few hours later had regurgitated its food, with a strong foul smell. Further examination revealed a large mass in the abdomen. Unfortunately the bird died before any treatment could be done. When autopsied, the bird was found to be impacted with literally hundreds of grasshoppers.

The bird, found sitting in a field in Cayce West Columbia, was brought in by Angela Carter.—LEX GLOVER, Senior Keeper, Birds, Riverbanks Zoo, Columbia, S.C.

Amateur Turns Pro

An old friend of this columnist is Robert Manns of Atlanta, former Southeast representative for National Audubon, long-time member of CBC, and now president of Georgia Ornithological Society. He has established Robert Manns and Associates, 2099 McKinley Road NW, Atlanta, Georgia 30318, to sell new and used binoculars, telescopes, telephoto lenses, tripods, and accessories and to provide optical service, including realignment. If you call 404-352-3679 for advice, the cost of your call will be deducted from your purchase.

Bob reports that Georgia now has a statewide hotline for rare birds and wants to hook up with the Carolinas.

Newspaper Gleanings

Sixteen baby Bald Eagles from Alaska have been set free in New York State at the Alcove Reservoir. ... Two Golden Eagles have been released in the Shining Rock Wilderness Area of North Carolina. ... University of Idaho professor Erik Stauber says that no two birds have the same pattern of toe-prints, a fact which can be used to identify individual birds. ... The U.S. Fish and Wildlife Service forecast says that populations of some ducks are down this year: Northern Pintail, Mallard, and teal. For example, the Service predicts 3.66 million pintails, down 10% from last year and the lowest in 30 years. ... John Stokes, assistant bird curator at the Memphis Zoo, has performed successful feather transplants on eagles and owls.

General Field Notes

DAVID S. LEE

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Osprey and Cliff Swallows Found Breeding in Guilford County, N.C.

H.T. HENDRICKSON

Department of Biology
University of North Carolina at Greensboro
Greensboro, N.C. 27412

On 6 June 1984 I visited Lake Townsend at Greensboro, Guilford County, N.C., and found a nest apparently occupied by an Osprey (*Pandion haliaetus*). The nest was approximately one-third of the way up a steel tower that supports high-voltage electrical lines. The tower is in the middle of the lake about midway between Church Street and Yanceyville Road. The distance of the tower from either road prevented positive identification of the bird with 7 x 50 binoculars. I returned to the site on 7 June with a 25X telescope and confirmed that the bird on the nest was an Osprey. A third visit on 13 June still found only one bird at the nest. No second bird was seen on any of these three visits, all of which were made in the early afternoon. On 14 June I viewed the nest from Yanceyville Road at 0830 EDT and found two birds at the nest. A second bird was also present on 15 June.

Conversations with G. Rudd, Lake Warden for the City of Greensboro, and Buddy Priest, of Duke Power Company, affirm that Ospreys have nested at this location since at least 1976. Both men indicated that a second nest may have existed in the late 1970s or early 1980s. Warden Rudd claims that the adults have reared young successfully during each of the years they have been present at Lake Townsend.

I find no solid evidence for breeding Ospreys in the piedmont of North Carolina or South Carolina, although there are many records of occurrence as migrants or single birds during the summer months. This report appears to be the first published evidence of Ospreys breeding well beyond their known range in the Carolinas.

On the morning of 14 June, while studying the Osprey nest from Yanceyville Road, I also observed a single Cliff Swallow (*Hirundo pyrrhonota*) flying round the area. The rusty rump and square tail made the bird conspicuous among the many Barn Swallows (*H. rustica*). Returning to the site that afternoon, I found an occupied nest under the bridge. When I later described the nest appearance and location to Warden Rudd, he said that he had seen it last summer but had passed it off as merely a "funny-looking" Barn Swallow nest.

Cliff Swallows have already been reported as breeding at many sites in the North Carolina piedmont (e.g. Lake Cammack, Hyco Reservoir, McGehee's Mill, and Jordan Lake) as well as at a few isolated sites in the mountains and along the immediate coast.

Their nesting at Lake Townsend is consistent with a significant expansion of their breeding range into the Southeast.

I thank Richard D. Brown for suggesting that I look for Ospreys nesting in Guilford County.

First Active Nest of Alder Flycatcher in North Carolina

JERRY YOUNG

67 Laurel Haven Road

Fairview, N. C. 28730

On 11 June 1984, I observed an Alder Flycatcher (*Empidonax alnorum*) carrying building material to a nearly completed nest. The site was 11 m S of U.S. Forest Service Road 816 and approximately 100 m W of the intersection of the Art Loeb Trail and USFS Road 816. This paved service road begins at mile post 420.2 on the Blue Ridge Parkway and terminates near the boundary of the Shining Rock Wilderness Area. The elevation at the nest site is 1804 m.

The entire nest was constructed of dry grass with smaller straws being employed for the lining. The compact cup was 0.5 m above the ground and attached to three dead blackberry (*Rubus* sp.) canes. At this date no eggs had been laid.

On 14 June I returned to the nest and found a bird incubating two eggs, which were cream colored and marked with chestnut at the larger end (Fig. 1). I photographed the bird on the nest (see front cover) but was unable to return to the site on subsequent days and therefore cannot attest to the final success of the nest.

For a number of seasons Alder Flycatchers have been seen and heard in this area as well as on Roan Mountain (Chat 43:35-36). It has been assumed that the North Carolina birds are breeding, but until my find on 11 June, no active nest had been found in the state.



Fig. 1. Nest and eggs of the Alder Flycatcher. (Photo by Jerry Young®)

Second Record of Mew Gull for North Carolina

ROBERT H. LEWIS

33 Redfield Street

Rye, New York 10580

In late December 1983, a large Menhaden (*Brevoortia tyrannus*) kill and cold weather to the north resulted in an unusually large concentration of gulls in the vicinity of Hatteras Inlet, Dare County, N.C. On the afternoon of 27 December, I checked birds gathered on the sand flats at the Ocracoke side of Hatteras Inlet.

In scanning through a dense collection of standing Ring-billed Gulls (*Larus delawarensis*), I noticed a strikingly different bird and studied it for the next 10 minutes with my 80X Questar telescope. The bird was standing about 100 to 150 yards away. Visibility was excellent.

I was attracted to the bird by its very dark plumage. Resembling a first-winter Ring-billed Gull, the bird differed from that species in the uniformly chocolate brown wings. Each feather on the wing coverts was almost entirely brown, with only a narrow white edge. In comparison, the paler brown feathers of a Ring-billed of this age show much white around the edges and thus produce a mottled or "contrasty" effect. The brown color extended over most of the mantle, where it blended with a dark gray, apparently a darker gray than that of a Ring-billed Gull. The primaries were blackish brown.

The head was small and rounded, and was very profusely and darkly mottled with the same brown color over the nape, sides, and crown. It was whitish only towards the front. Pale at the base and dark at the tip, the bill was extremely short and thin, relative to that of all the nearby Ring-billeds.

The underparts were, again, strikingly dark and brownish. Whereas most first-year Ring-billeds are white flecked with brown on the breast, belly, and flanks, this bird was brown flecked with white. Toward the vent and under-tail coverts the color was whiter, but still streaked with brown. In coloration the bird gave much the same impression as a first-winter Herring Gull (*L. argentatus*). The deep brown color was not a result of oil, for the bird's plumage was neat and fresh.

In overall size the bird was slightly smaller than most of the surrounding Ring-billed Gulls. It also seemed to have shorter legs. I cannot comment on the tail or rump coloration because I lost sight of the bird when the entire group took flight.

My immediate thought was that the bird was a first-year Mew Gull (*L. canus*). Certainly it had the right size, shape, and head profile for that species. Having never before seen a first-winter bird of this species, I was confused initially because this individual did not match my conception of a first-winter Mew Gull. This is perhaps because subspecies vary in plumage.

Larus canus breeds over most of the Arctic, missing only central and eastern North America. The western North American race, *L. c. brachyrhynchus*, differs significantly from the nominate race, *L. c. canus* (the Common Gull of Europe), especially in first-winter plumage.

Briefly summarizing the excellent article by Lauro and Spencer (1980), first-winter Common Gulls are less streaked below than Ring-billed Gulls, and have more uniform and paler brown wing coverts. However, first-winter Mew Gulls from our West, com-

pared to Ring-billeds, have darker brown wing coverts and are darker below. All *L. canus* are slightly smaller than Ring-billeds and have short, dainty bills, with the Western race being the smallest. But bill size alone does not separate the species: Small female Ring-billeds can have small bills.

In overall coloration, from darkest to lightest, the sequence is Mew Gull (*L. C. brachyrhynchus*), Ring-billed Gull, and Common Gull (*L. c. canus*). For more information, consult the article by Lauro and Spencer. The bird I observed is very similar to the bottom bird in Figure 5 of that article, or to the top right bird of Figure 12. It is also well represented by Plate 61, number 213e, of Harrison (1983).

This constitutes the second sight record of *L. canus* for North Carolina. The first occurred in December 1980 (Lewis et al. 1981).

LITERATURE CITED

- Lauro, A., and B. Spencer. 1980. A method for separating juvenile and first winter Ring-billed Gulls and Common Gulls. *American Birds* 34:111-117.
- Harrison, P. 1983. *Seabirds, an Identification Guide*. Houghton Mifflin Co., Boston.
- Lewis, R. H., M. Tove, and H.E. LeGrand Jr. 1981. Rare gulls at Cape Hatteras, N.C., including first Carolina record of Mew Gull. *Chat* 45:75-77.

NEW GENERAL FIELD NOTES EDITOR

E. Wayne Irvin will succeed David S. Lee as General Field Notes Editor for North Carolina, effective with the Winter 1985 issue of *The Chat*. Dr. Irvin is a dentist by profession, but he has wide experience as a nature photographer, taxidermist, and ornithologist. Dr. Irvin is particularly interested in pelagic birds. His wife, Fran, is Headquarters Secretary for Carolina Bird Club. Dr. Irvin's mailing address is in care of the North Carolina State Museum of Natural History, P.O. Box 27647, Raleigh, N.C. 27611.

After more than 4 years of editing field notes, Mr. Lee has given up his position on the staff of *The Chat* in order to have more time for field research and preparation of papers for publication. His interests include the birdlife of North Carolina's offshore waters, pocosins, and mountains, particularly Grandfather Mountain. As Curator of Birds at the North Carolina State Museum of Natural History, Mr. Lee will work closely with the present editors and serve as chairman of the North Carolina Records Committee for CBC. As Chief of the North Carolina Biological Survey, he will continue preparing a publication on the distribution of the breeding birds of the state.

CORRECTION

**CBC Rare Bird Alert Phone Number
704/875-2525**

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1984)

COMMON LOON: At Lake Keowee, S.C., Douglas McNair counted 23 on 10 April, with a late bird there on 26 May.

PIED-BILLED GREBE: An excellent inland count was 85, noted by Douglas McNair at Lake Keowee on 13 March.

NORTHERN FULMAR: Apparently regular in early spring off the North Carolina coast, single birds (or the same individual) were noted 40 miles SSE of Beaufort Inlet on 7 April by Ricky Davis and party and on 12 April by Lloyd Davidson.

BLACK-CAPPED PETREL: Ten were observed by Wayne Irvin, Dave Lee, and others on 3 March in the Gulf Stream off Cape Lookout, N.C. Very rare for South Carolina were four noted by Chris Haney on 11 May approximately 88 miles SE of Charleston.

GREATER SHEARWATER: Rather early was one seen by Dennis Forsythe off Charleston on 7 May.

MANX SHEARWATER: A good find was one, and possibly a second, off Cape Lookout on 3 March, as seen by Dave Lee, Harry LeGrand, and party.

AUDUBON'S SHEARWATER: Chris Haney had an excellent total of 169 on 11 May off Charleston.

WILSON'S STORM-PETREL: Dennis Forsythe observed one rather early on 7 May off Charleston.

AMERICAN WHITE PELICAN: One was seen in the Morehead City, N.C., area on 15 March and for a week thereafter by Allyn Powell and others. Another was noted by Charlie Walters and Perry Nugent in Charleston harbor on 27 April.

DOUBLE-CRESTED CORMORANT: Migrants inland continue to increase, and counts in triple digits are not unusual on some lakes. Douglas McNair observed about 2200 at Lake Marion, S.C., and just below the dam, on 18 March. Counts of several hundred were made in central North Carolina at both Falls Lake and Jordan Lake in April and May (Ricky Davis et al.). Notable elsewhere were single birds in flight at Crowders Mountain State Park, N.C., on 28 April (Duane Crane et al.) and near Charlotte, N.C., on 5 May (Paul Hart party).

ANHINGA: Philip Crutchfield observed three adults, probably breeders, along Calabash Creek in southwestern Brunswick County, N.C., on 31 March and again on 27 April.

LEAST BITTERN: Extremely rare for the mountains was one seen at a marsh on the campus of Warren Wilson College in Swannanoa, N.C., by Ruth and Jerry Young on 10 May.

GREAT EGRET: The westernmost sighting for the spring was one at Tanglewood Park near Winston-Salem, N.C., from 8 to 12 April (Lee and John Carter, Charles Frost, Preston Stockton).

SNOWY EGRET: Unusual in the piedmont in spring were a flock of seven at Lake Wheeler near Raleigh, N.C., on 22 April (Harry LeGrand, Jim Mulholland) and another bird at Jordan Lake on 6 May (Ricky Davis).

TRICOLORED HERON: Ricky Davis saw one at Jordan Lake on 23 April for one of the few piedmont records in spring.

REDDISH EGRET: Notable, especially away from the immediate coast, was one seen at close range at Middleton Plantation, near Charleston, on 7 April by Dick Peake.

BLACK-CROWNED NIGHT-HERON: A good inland total was five, seen by Philip Crutchfield at Fayetteville on 23 April. A dead adult was found near Raleigh on 5 May by Harry LeGrand and Ricky Davis. Rare for the mountains was an adult seen and heard by Douglas McNair at Cashiers, N.C., on 3 May.

- YELLOW-CROWNED NIGHT-HERON:** Along New Hope Creek near Chapel Hill, N.C., an adult was seen on 27 April, and two adults were there on the following day (Bill and Margaret Wagner et al.). Two were seen at Falls Lake on 13 May by Allen Bryan and Ricky Davis.
- GLOSSY IBIS:** A rare inland migrant was seen by Pat and Pete Hobson at Jordan Lake on 28 April.
- BRANT:** One was late at Portsmouth, N.C., on 10 May, as observed by Rich Boyd, John Fussell, and Ecky Meadows.
- NORTHERN SHOVELER:** Two males and a female were seen by Douglas McNair at Cashiers, N.C., on 5 May for a rare mountain report.
- AMERICAN WIGEON:** A good count for northwestern South Carolina was 80 at Lake Keowee, noted by Douglas McNair on 13 March.
- RING-NECKED DUCK:** Mike Schultz observed two late ducks at Falls Lake, near Durham, on 12 May.
- GREATER SCAUP:** Sidney Gauthreaux saw a female near Townville, S.C., on 1 March.
- SURF SCOTER:** Very rare inland was one seen by Douglas McNair on Lake Keowee on 13 March.
- WHITE-WINGED SCOTER:** Douglas McNair noted individuals at Lake Keowee on 13 March and on 4 April.
- HOODED MERGANSER:** Late migrants, both females, were seen by Ron Warner on 15 May at Lake Lure, N.C., and on 17 May in Hendersonville, N.C.
- COMMON MERGANSER:** Ricky Davis and Allen Bryan observed three at Jordan Lake on 23 March.
- BLACK VULTURE:** Infrequent in the mountains, perhaps only visitors, were two at Table Rock Mountain, S.C., at 3100 feet on 5 April (Douglas McNair); one at Cleveland Cliffs, S.C., at 3000 feet on 7 April (McNair); and two near the Asheville, N.C., airport on 16 March (Ron Warner).
- OSPREY:** The first Osprey nest ever reported for the piedmont of the Carolinas was discovered by Annie Leigh Broughton, Johnnie Payne, and party at Jordan Lake on 6 May. By mid-May, the nest was damaged, apparently by a severe storm, and appeared abandoned, even though the adults were still present, according to Barbara Roth. The nest tree, situated in a grove that had been killed by high water at the recently filled lake, was about 2 miles N of US 64. Also at this lake, Ricky Davis, Allen Bryan, and Harry LeGrand tallied 30 birds on 15 April, most migrating north. [See related article on page 92 of this issue.—ED.]
- AMERICAN SWALLOW-TAILED KITE:** Migrants having overshot their range, all in North Carolina, were at Ocracoke Island on 8 March (Larry Crawford), near Avon on 16 April (Dick Walton), near Winnabow in Brunswick County on 9 May (Jay Carter), and in the Cape Carteret area of western Carteret County on 16 and 31 May (Henry Haberyan). Another was seen on 7 April by Dick Peake at Four Holes Swamp near Harleyville, S.C., where the species could possibly breed.
- MISSISSIPPI KITE:** An excellent count for an early date was seven seen by Mary Ann Sunderlin and Warren Lloyd on 28 April near Norfleet in eastern Halifax County, N.C. A very rare migrant was an immature seen by Henry Haberyan and others at Cedar Point near Swansboro, N.C., on 16 May.
- BALD EAGLE:** The first successful nesting in the wild in North Carolina since 1970 occurred when a pair fledged two young from a nest on mainland Hyde County this spring. The nesting was carefully monitored by wildlife biologists and was reported by Melinda Welton. A remarkable count of 14 (2 adults and 12 immatures) was seen by Douglas McNair at a marsh below the dam at Lake Marion, S.C., on 18 March. A few were seen this spring, as usual, at Jordan and Falls lakes, fide Ricky Davis. Others inland were an immature seen in eastern Halifax County, N.C., on 28 April (Mary Ann Sunderlin, Warren Lloyd) and an adult just east of Asheboro, N.C., on 4 June (Ron Morris).
- NORTHERN HARRIER:** Allen Bryan noted a late harrier in central Guilford County, N.C., on 12 May.

SHARP-SHINNED HAWK: Late was an immature seen at Fayetteville on 16 May by M.E. Whitfield.

COOPER'S HAWK: Rare and late was an immature seen by John Fussell at Cedar Island, N.C., on 20 May. Suggestive of nesting was a pair in courtship flight near Jefferson, N.C., on 19 May, as noted by Harry LeGrand and Ricky Davis.

NORTHERN GOSHAWK: Seldom reported in spring was an adult seen soaring overhead in southeastern Alamance County, N.C., by Allen Bryan on 11 March.

BROAD-WINGED HAWK: Rare for the Outer Banks of North Carolina was one at Portsmouth on 12 May (John Fussell, Rich Boyd). A good spring flight was noted at Jordan Lake on 15 April, when Ricky Davis, Allen Bryan, and Harry LeGrand tallied 30 birds, migrating singly or in small groups.

AMERICAN KESTREL: Jay Carter again noted birds throughout May at several sites in western Fort Bragg, N.C., and he saw a juvenile on 28 May.

MERLIN: Inland Merlins were observed by Steve Compton and others near Columbia, S.C., on 5 May; and another was seen, feeding on prey, near Fayetteville on 5 May by Philip Crutchfield and party.

PEREGRINE FALCON: Jim Mulholland had a rare inland sighting near Raleigh on 1 May, whereas an immature was late near the coast at Cedar Island on 20 May (John Fussell et al.).

YELLOW RAIL: Extremely rare was one flushed from a marsh on the Warren Wilson College campus at Swannanoa, N.C., on 10 May by Andrew Brown and Judy Arthur. The bird was "clearly smaller than the Soras that were also seen that day," and it "appeared greyish with short bill, in flight wings showed a distinct white patch on secondary feathers" (according to Brown).

SORA: Normally scarce in the mountains, six to eight were flushed from a marsh at Swannanoa from 9 to 12 May by Andrew Brown and others.

KING RAIL: Individuals were heard calling in marshes at Falls Lake near Durham on 22 April by Andy Towle and 12 May by Mike Schultz.

PURPLE GALLINULE: A straggler was noted at Merchants Millpond State Park, N.C., from 26 May to 3 June, as reported by Floyd Williams.

LESSER GOLDEN-PLOVER: The only report for the spring was three seen by Sidney Gauthreaux, Charlie Wooten, and others near Townville, S.C., on 31 March.

SEMPALMATED PLOVER: Noteworthy for the mountains were three seen at Black Mountain, N.C., on 12 May by Ron Warner and party.

LESSER YELLOWLEGS: An excellent count for the mountains was 33 on the Hendersonville, N.C., spring count on 9 May, fide Ron Warner. Allen Bryan noted 21, along with 11 Greater Yellowlegs, at Roxboro City Lake, N.C., on 3 May.

WILLET: Inland individuals were seen at a water-treatment plant near Pineville, N.C., on 9 May (Harriet Whitsett) and at Falls Lake in Durham County on 12 May (Mike and Lois Schultz).

SPOTTED SANDPIPER: A late migrant was observed by Doug Pratt, P.R. Ford, and Eloise Potter at Southport, N.C., on 3 June.

UPLAND SANDPIPER: Near Raleigh, two were noted on 15 April by Harry LeGrand and Ricky Davis, and Jim Mulholland had another in that area on 28 April. Davis saw another at Falls Lake on 22 April, and one was near Pineville, N.C., on 21 April (Heathy Walker). In South Carolina, one was at Creech's Pond in northern York County from mid-April to 5 May (David Wright, Flo Cobey), and two were at Clemson on 21 April (Sidney Gauthreaux).

WHIMBREL: John Fussell saw an individual of the Eurasian race (with white on the lower back and rump) at Atlantic Beach, N.C., on 10 April.

SANDERLING: Rare inland was one seen by Allen Bryan at Jordan Lake on 4 May. Perhaps the same bird was there on 6 May, as noted by Ken Knapp.

WESTERN SANDPIPER: Notable inland in spring was one seen by Ricky Davis at Falls Lake on 20 May.

WHITE-RUMPED SANDPIPER: The only reports away from the coast were from Raleigh, where a peak of seven was counted at Lake Wheeler on 8 May (Harry LeGrand), and near Pineville, where two to four were seen at the McAlpine Waste Treatment Plant from 5 to 9 May (Paul Hart et al.).

PECTORAL SANDPIPER: A good mountain total was eight at Fletcher, N.C., on 7 May, as observed by Ruth and Jerry Young.

DUNLIN: Near Pineville, two were seen on 5 May by Heathy Walker and party, and Paul Hart saw three there on 9 May. Ricky Davis saw another at Jordan Lake on 6 May.

CURLEW SANDPIPER: Always noteworthy was an individual, in breeding plumage, observed by John Fussell and Rich Boyd at Portsmouth Island, N.C., on 12 May.

SHORT-BILLED DOWITCHER: Inland sightings for the spring were two seen by Jim Mulholland at Beaverdam Reservoir, in northern Wake County, N.C., on 16 May, and one seen by Heathy Walker at Pineville on 5 May.

STILT SANDPIPER: Quite early were two on 7 April at Cedar Island, N.C. (John Fussell, Henry Haberyan, C.W. Van Buren). An outstanding spring count was the 40 seen by Douglas McNair on South Island, S.C., on 13 May.

WILSON'S PHALAROPE: John Fussell and Rich Boyd observed one on 11 and 12 May at Portsmouth.

RED-NECKED PHALAROPE: Three were seen 85 miles SE of Charleston on 11 May by Chris Haney.

RED PHALAROPE: A pelagic trip led by Wayne Irvin tallied 65 off Cape Lookout, N.C., on 3 March. Dennis Forsythe noted the species on all five trips he took off Charleston from 10 March to 22 April; the peak was 135 on 18 March.

POMARINE JAEGER: A fairly good count was five seen by Chris Haney off Charleston on 11 May.

PARASITIC JAEGER: Dennis Forsythe observed two Parasitics, as well as two Pomarine Jaegers, off Charleston on 15 April.

LAUGHING GULL: Outstanding inland counts were made on several South Carolina lakes by Douglas McNair: 800 at Lake Marion on 10 May, 180 at Lake Moultrie on 10 May, and 150 at the latter lake on 18 March. At Jordan Lake, Ricky Davis saw one on 23 April, and another (or the same) individual was there on 6 May (Andy Towle et al.).

BONAPARTE'S GULL: Good counts for the western piedmont were 100 at Lake Keowee on 4 April, and 85 there on 21 April, as observed by Douglas McNair.

HERRING GULL: Douglas McNair had notable inland totals of 70 on 18 March at Lake Marion and 45 on 10 April at Lake Keowee.

ICELAND GULL: John Fussell and others carefully observed a second-winter bird in Beaufort, N.C., on 4 and 5 March.

LESSER BLACK-BACKED GULL: Dennis Forsythe noted a second-winter individual off Charleston on 18 March. In Carteret County, John Fussell saw a second-winter gull at Beaufort on 6 March and an adult at a landfill near Newport on 28 March.

GREAT BLACK-BACKED GULL: Very rare away from the tidewater zone was an immature seen by Allen Bryan at Jordan Lake on 4 May.

BLACK-LEGGED KITTIWAKE: Dennis Forsythe observed an adult and an immature approximately 50 miles off Charleston on 18 March.

CASPIAN TERN: Unusually large numbers were seen in central North Carolina during the spring, highlighted by Jordan Lake counts of 27 on 23 April (Ricky Davis) and 20 on 21 April (Barbara Roth). At Lake Wheeler near Raleigh, birds were seen from 13 April to 10 May with a peak of nine on 22 April (Jim Mulholland). Nine were also seen near Durham at Falls Lake on 22 April (fide Mike Schultz), two were at Woodlake near Vass on 29 April (Tom Howard), and two were near Fayetteville on 6 May (Jarvis Hudson, Roy Parker, et al.).

COMMON TERN: Douglas McNair noted a total of five at two places on Lake Keowee on 30 April, and Ricky Davis observed one at Jordan Lake on 23 April.

FORSTER'S TERN: Small numbers were seen most of April at Jordan Lake, with a peak of five on 23 April (Ricky Davis). Mike Schultz and Andy Towle observed two on the Durham spring count on 22 April.

BRIDLED TERN: Rather early was one seen by Chris Haney off Charleston on 11 May.

RAZORBILL: Probably the latest spring record for the Carolinas were three Razorbills carefully studied by Dick Peake in Charleston harbor, near Fort Sumter, on 8 April.

BLACK-BILLED CUCKOO: Rather rare in central North Carolina were singles (seen and heard) near Raleigh on 28 April by Jim Mulholland and on 12 May by Harry LeGrand, and near Fayetteville on 15 May by Philip Crutchfield.

NORTHERN SAW-WHET OWL: Noteworthy for the piedmont was one found, nearly dead, at Durham on 3 April by Janine Heffner, fide Bill Wagner. At established summer locations, Wayne Irvin heard calling birds at eight stations along the Blue Ridge Parkway between Richland Balsam and the Shining Rock Wilderness Area, N.C., on 26 May.

RED-BELLIED WOODPECKER: At an unusually high elevation was one noted at 3000 feet on Sassafras Mountain, S.C., on 7 April by Douglas McNair.

RED-COCKADED WOODPECKER: A nesting pair was discovered this spring near New Hill in southwestern Wake County, N.C., by Robbie Blue and party. The pair raised two young, which were banded by wildlife biologists.

OLIVE-SIDED FLYCATCHER: A migrant was a good find in northeastern Ashe County, N.C., on 19 May, as seen by Ricky Davis and Harry LeGrand.

WILLOW FLYCATCHER: A singing bird was noted by Marc Eisdorfer on 22 May at Chapel Hill. There was no indication whether or not it was on territory.

LEAST FLYCATCHER: A migrant was observed singing near Jordan Lake on 6 May by Andy and Patty Towle, Tony Shrimpton, and Melinda Welton.

EASTERN PHOEBE: Near the edge of its breeding range was one on territory near Fayetteville on 15 May (Philip Crutchfield).

EASTERN KINGBIRD: Dick Thomas observed early kingbirds near Pekin, Montgomery County, N.C., on 28 March and near Whispering Pines, Moore County, N.C., on 29 March.

GRAY KINGBIRD: Suggestive of nesting was a pair seen daily from 11 to 13 May at Fripp Island, S.C., by T.K. Patterson.

SCISSOR-TAILED FLYCATCHER: Always exciting were individuals seen on 18 and 19 April at Hilton Head Island, S.C. (Grace Belford, Jan Kissling); at Cedar Island, N.C., on 29 April (Wayne Irvin); at Swannanoa, N.C., on 10 May (Sharon Sloan, photo examined by Gordon Mahy); and near Oriental, N.C., on 24 May (Ricky Brandon, Dorothy and Roger Foy, John Fussell).

TREE SWALLOW: Possible breeders were two seen along the New River north of Sparta, N.C., on 19 May by Harry LeGrand and Ricky Davis.

COMMON RAVEN: Douglas McNair observed nonbreeding ravens in the South Carolina mountains at Table Rock Mountain (a pair on 5 April) and at 3000 feet on Cleveland Cliffs (one on 7 April).

RED-BREASTED NUTHATCH: Late was one in Gail Whitehurst's yard at Raleigh in early May, last seen on 11 May. At a low elevation for the breeding season was one at 3100 feet at Linville Falls, N.C., on 23 May (Harry LeGrand).

SEDGE WREN: Douglas McNair observed single birds on 17 and 18 March, at two locations at Santee National Wildlife Refuge, S.C. These dates might be somewhat early for migrants; perhaps the species winters regularly there.

MARSH WREN: Perhaps wintering were four noted by Douglas McNair at Santee National Wildlife Refuge on 17 March and one seen near Fayetteville on 12 March by Philip Crutchfield.

GOLDEN-CROWNED KINGLET: At a rather low location were at least four singing on territory at 3100 feet elevation at Linville Falls on 23 May (Harry LeGrand).

BLUE-GRAY GNATCATCHER: Douglas McNair observed one at the high elevation of 3500 feet at Cashiers, N.C., on 5 May.

GRAY-CHEEKED THRUSH: Rare for the eastern coastal plain was one seen from 16 to 18 May at Merchant's Millpond State Park, N.C., by Floyd Williams.

WATER PIPIT: Rather late were 15 to 20 seen near Swannanoa from 9 to 12 May by Dennis Moore and Andrew Brown.

CEDAR WAXWING: Bill Williams noted two birds, perhaps a mated pair, "behaving unusually agitated" in a stand of Bald Cypress near Rockyhock in Chowan County, N.C., on 10 June. The species currently breeds in the state only in the mountains and sparingly in the northern piedmont. Probably late migrants were four seen by Tom Howard at Falls Lake on 3 June.

SOLITARY VIREO: Quite early was a nest found on 16 April by Libba Watson at Drowning Creek, west of Pinebluff, N.C. For the second consecutive summer, Eloise Potter had vireos in her yard near Zebulon, N.C., noting two singing from 9 May into June.

WARBLING VIREO: Probably the best influx of migrants ever seen in North Carolina occurred this spring. In the Sandhills, where there was only one previous record, Sybil and Faust D'Ambrosi saw one near Vass on 25 April, and they had one there on 29 April, the same date Charlotte Gantz had one at nearby Southern Pines. In the Raleigh area, where warbling vireos are very rare, Jim Mulholland observed one on 25 April, and Ricky Davis saw and heard another on 27 April. Presumably a record piedmont count was the eight tallied on the Winston-Salem count on 5 May (fide Ramona Snively).

PHILADELPHIA VIREO: Allen Bryan observed a very rare migrant at Burlington, N.C., on 5 May.

GOLDEN-WINGED WARBLER: Rather rare were individuals seen by Ricky Davis near Raleigh on 27 April and by Paul Hart at Crowders Mountain State Park, N.C., on 4 May.

TENNESSEE WARBLER: Rare and somewhat late were one noted singing at Raleigh on 15 May (Harry LeGrand) and another seen at Chapel Hill on 17 May (Hugh Craft).

NASHVILLE WARBLER: Haven Wiley saw one on 29 April at Chapel Hill and Charlie Wooten saw one along the Wateree River in Kershaw County, S.C., on 20 May.

YELLOW WARBLER: Two showing nesting behavior were seen by Marc Eisdorfer at Mason Farm near Chapel Hill on 22 May. Yellow Warblers have become quite rare as breeders in the eastern piedmont.

CHESTNUT-SIDED WARBLER: One seen by JoAnne Powell and Nancy Merringer in central Carteret County, N.C., on 5 May provided a first spring record for the county.

YELLOW-THROATED WARBLER: Most unusual for the northern mountains of North Carolina was one singing on territory at Roaring Gap (3000 feet in elevation), as noted on 19 May by Ricky Davis and Harry LeGrand.

BAY-BREASTED WARBLER: This migrant species was unusually numerous in the piedmont this spring. Notable for the Sandhills was one seen by Tom Howard near Vass, N.C., on 29 April and another by Libba Watson near Southern Pines on 13 May.

CERULEAN WARBLER: A first record for the North Carolina Sandhills was one seen near Vass on 29 April by Jay Carter and Julie Moore. Perhaps on the breeding grounds was one at Bull Creek Overlook, northeast of Asheville, N.C., on 13 May, as noted by Ruth and Jerry Young. It, or another bird, was also there last year. The 3500-foot elevation is much higher than other breeding-season locations in the state.

PROTHONOTARY WARBLER: Dave Lee noted a very early individual at White Lake, N.C., on 17 March, and another was early at Cape Lookout, N.C., on 30 March (Skip Prange).

WORM-EATING WARBLER: Seldom seen in the breeding season in central North Carolina, one on territory at Hemlock Bluffs near Cary on 14 and 27 May was unusual (Harry LeGrand), as were two singing on territory near Wade, Cumberland County, on 15 and 26 May (Philip

Crutchfield, M.E. Whitfield).

SWAINSON'S WARBLER: Harry LeGrand noted two singing along the Deep River in Lee County, N.C., on 28 April. One was still there on 6 May, singing on territory in a small ravine with hardwoods and Mountain Laurel in the understory. Ricky Davis had a singing individual just east of Raleigh on 5 May; he believed it was not on territory.

CONNECTICUT WARBLER: The only report for the spring was a migrant noted singing along Bent Creek in Buncombe County, N.C., on 5 May by Ruth and Jerry Young.

WILSON'S WARBLER: Scarce for the mountains was one seen by Ron Warner near Hendersonville, N.C., on 9 May. There were scattered sightings this spring for the North Carolina piedmont, as usual, with four on the Raleigh count on 5 May being an excellent number (fide Robert Hader).

WESTERN Tanager: A male wintered in the yard of Mr. and Mrs. Cliff Hammonds in Fayetteville and was last seen on or about 10 May, when it was coming into breeding plumage.

ROSE-BREASTED GROSBEAK: An excellent total of 125 were seen by Douglas McNair in the Highlands, N.C., vicinity on 4 May. He believed that most were migrants.

BLACK-HEADED GROSBEAK: An immature male was well studied at a feeder by McDuffy Wade, John Fussell, and many others near Morehead City from 19 March to 21 April. A female was unusual at High Point, N.C., on 6 May, as thoroughly described by Robert Odear.

BLUE GROSBEAK: About a week early was one near Chapel Hill on 15 April (Harry LeGrand, Ricky Davis, Allen Bryan).

DICKCISSEL: Wayne Irvin observed a male on territory at Raleigh on 12 May, and up to four birds (including several females) were seen there through 15 May by Jim Mulholland and others. Unfortunately, the field was mowed a few days later, and the birds disappeared.

BACHMAN'S SPARROW: Five singing males were a fairly good count, noted by Philip Crutchfield near Calabash, N.C., on 31 March.

SONG SPARROW: Several weeks late was one seen by Douglas McNair at Santee Coastal Reserve, S.C., on 11 May.

LINCOLN'S SPARROW: One seen by Bill Hilton Jr. near York, S.C., on 5 May was the only spring report.

DARK-EYED JUNCO: Eleanor Carter observed a late junco at Southern Pines on 5 May.

YELLOW-HEADED BLACKBIRD: Henry Haberyan and John Fussell observed a female at Cedar Island, N.C., on 7 April. It remained to 29 April.

BREWER'S BLACKBIRD: A male was seen by Sidney Gauthreaux and party on 21 April near Townville. This portion of extreme western South Carolina is the only place where the species has been reported regularly over the last 10 years.

HOUSE FINCH: Several birds nested again this spring on the Clemson University campus in Clemson, fide Charlie Wooten. At a high elevation was one noted by Douglas McNair at 3000 feet on Sassafras Mountain, S.C., on 7 April.

EVENING GROSBEAK: Quite late was one seen at Pine Knoll Shores, N.C., on 21 and 22 May by Kathy Kirkman.

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General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—Hugh Morton photographed a Common Raven in flight above Grandfather Mountain, N.C., where the species occurs regularly. The Ruffed Grouse drawing on page 14 is by John Henry Dick.

Summer Bird Fauna of North Carolina's Grandfather Mountain

DAVID S. LEE, DAN AUDET and BRYANT TARR

In June of 1911 Bruner and Field (1912) visited Grandfather Mountain as part of a month-long excursion of observing and collecting birds in western North Carolina. They noted 49 species during their week's stay on the mountain. Although Grandfather Mountain (Avery, Caldwell, and Watauga Counties) has since become one of the most-visited attractions in North Carolina, little subsequent information on its bird life is available. A single exception to the sparse, random observations that have appeared from time to time in *The Chat* is a study by Alexander (1973) on the abundance and habitat preferences of birds on the north slope of this mountain. His study consisted of 28 weekly censuses between 11 April and 25 November 1969 on a single transect up one side of the mountain (elevation 4045 to 5800 feet). In this study he encountered 48 species of birds, at least 13 of which were migrants (or encountered only during the migration period). Unfortunately, he pooled observations of breeding and migration periods, so that his elevation information does not really reflect some of the more narrow distributional limits of species nesting on the mountain.

During the summer of 1984, we had the opportunity to add many species to the known summering fauna of the mountain and to gain some additional understanding of the habitat and elevational distributions of local summering bird life. Several of the records, although expected, were of species not known to breed locally, and one species was not previously known to breed in the state. Furthermore, our field effort fills an important gap in the understanding of the zoogeographical distribution of birds in the southern Appalachians. Several of the records, for example, partly fill an assumed hiatus between extreme southern Appalachian populations and ones in southwestern Virginia. Except for several studies on Roan Mountain (North Carolina-Tennessee), this study represents the only attempt to examine the high-elevation bird life between Mount Rogers (5729 feet) and White Top (5719 feet) in Virginia and Mount Mitchell (6684 feet) in North Carolina, a distance of more than 100 air miles. A good overview of what is known of the avifauna of the southern Appalachians is provided by Hubbard (1971). We highly recommend reading his paper to place our work in better perspective.

Lee visited Grandfather Mountain on 24 and 25 March 1984 and camped on the mountain on 9 through 11 July and 24 through 26 July 1984. He worked all elevations of the area from 2200 to 5960 feet. Audet and Tarr camped on the mountain from 21 May through 13 July 1984. During these periods, major habitats at elevations from 4000 to 5960 feet were surveyed intensively by both parties, although Audet and Tarr spent much of their period of stay above 5000 feet while attending a hacking station for Peregrine Falcons (*Falco peregrinus*), which were released on Grandfather Mountain. The lower elevations and disturbed areas received less intensive study. Because of the dates of coverage and, for most birds, the regularity of observation, we believe all species discussed here breed on the mountain or its slopes.

Elevation distributional patterns were discussed by Alexander (1973) for Grandfather Mountain, and others have presented species inventories and discussed

distributional limits for various birds in the southern Appalachians (Stevenson 1941; Johnston 1964, Highlands; Tanner 1955, Black Mountains; Stupka 1963, Smoky Mountains; Simpson 1976, Plott Balsam Mountains; Simpson 1972a, Mount Mitchell; Tate and Smith 1974, southern Blue Ridge Parkway). Nonetheless, the elevational habitat distributions are not clear for most species, and methods to quantify the complex variations in vegetative zonation with a bird's local occurrence and relative abundance have not been tried. Here we attempt to better illustrate, but not quantify, the effects of vegetative zonation on the breeding birds of Grandfather Mountain. Where possible, we have combined portions of Alexander's (1973) data and our own. Simplistic statements of maximum and minimum elevation records tell little about the normal environmental needs of breeding birds. For example we found that Winter Wrens (*Troglodytes troglodytes*) ranged from the highest peaks (5864 feet) to intermediate slopes (3880 feet), but more than 75% of the wrens encountered were above 5000 feet and 60% were over 5400 feet. This pattern may be even more extreme than indicated here once more encounters are tallied and the slopes receive a uniform and systematic census. Nevertheless, discussion of distributional limits does provide general insight into habitat preferences for many species.

During our visits we encountered 49 species of breeding birds that had not been previously reported (Alexander 1973, Bruner and Field 1912). Additionally we checked unpublished museum records and sight records published in *Chat* but found only two reports of resident species or breeding-season records. Plymire (1978) provided details of nesting by five species at Linville (Avery County). Wray and Wray (1948) reported 64 species from the spring-migration period (13 May); several of these were year-round residents, and two species were reported nesting. Based on birds recorded from other intermediate and high-elevation areas in the southern Appalachians, the list compiled here is certainly not definitive, and several species were encountered on only a few occasions. Thus, the local elevational limits for some species are not yet very well documented. Because of the terrain of Grandfather Mountain, reputed to be the most rugged mountain in southeastern North America, and the remoteness of many of the high-elevation areas of the mountain, several more field seasons will be necessary to complete this study. Nevertheless, we believe our findings are more than preliminary and should be of interest to people familiar with the bird life of the southern Appalachians.

AREAS AND HABITATS STUDIED

The top of Grandfather Mountain is a long ridge with a series of rugged peaks extending west from Linville Peak (mile-high swinging bridge and visitor center, 5300 feet) to MacRae (5939 feet), Attic Window (5949 feet), and Calloway (5964 feet) Peaks. Many unnamed peaks and scattered mountain balds lie in between. Adjoining or leading ridges form the Eastern Continental Divide. The highest point on the ridge is only 720 feet lower than the summit of Mount Mitchell (Yancey County, N.C.), the highest mountain in eastern North America. The 5000-acre "backcountry" covering the slopes above 4000 feet is one of the South's most spectacular wilderness preserves. At the base of the southwest side of the mountain are Linville Gap and the town of Linville, but on the southeast side the slopes continue downward to elevations of 2200 feet. These lower elevations are best reached by Rattlesnake Cliffs Road and other less-well-maintained

gravel roads. US 221 follows a contour of 4200 to 3900 feet around the south and east sides of the mountain, and NC 105 goes through a valley (3700 to 4000 feet) that contains several miles of cleared urban and agricultural development. The most ecologically diverse of the high-elevation areas, however, can be reached only by hiking. Although the rugged and steep trails are well maintained, sudden changes in weather may make even short explorations quite uncomfortable and occasionally dangerous. Probably because of these factors, there had previously been no intensive ornithological exploration of the summit ridge of the mountain.

Alexander (1973) divided his study transect (Shanty Springs Trail) into five natural vegetative communities. We have followed his system for this study with some modification (Table 1). First, the plant communities attain different elevational limits on various sides of the mountain. This causes some overlap in community position, a fact not noted by Alexander. Second, we also included disturbed habitats (road rights-of-way, urban communities, and farmlands) and lower extremes of the mesophytic forest. Third, scattered throughout the upper summits are mountain balds (meadows and shrub thickets) not inventoried by Alexander.

From 2200 to 4400 feet are mixed mesophytic forests. They are composed mostly of hardwoods, but along stream margins are Canada Hemlock (*Tsuga canadensis*), White Pine (*Pinus strobus*), and Great Laurel (*Rhododendron maximum*). Forest composition shifts with elevation, but dominant trees include Yellow Birch (*Betula lutea*), Sugar Maple (*Acer saccharum*), Striped Maple (*Acer pensylvanicum*), Beech (*Fagus grandifolia*), Cucumbertree (*Magnolia acuminata*), Rock Chestnut Oak (*Quercus prinus*), and Hop Hornbeam (*Ostrya virginiana*). An understory of various viburnums and sprouts of American Chestnuts (*Castanea dentata*) is present, although in many places there is little subcanopy or shrub layer. The ground cover consists of scattered fallen logs, Shining Clubmoss (*Lycopodium lucidulum*), Cinnamon Fern (*Osmunda cinnamomea*), Christmas Fern (*Polystichum acrostichoides*), and various shade-tolerant herbs. Other major species that are most prevalent at the lower elevations include Red Oak (*Quercus rubra*), Black Oak (*Q. velutina*), White Oak (*Q. alba*), and Southern Red Oak (*Q. falcata*), the last two occurring below 3000 feet. Plant communities growing in the upper portion of this zone of the mountain are generally more dense but less diverse.

The hemlock-rhododendron community is confined to a relatively narrow, usually rocky zone from 4400 to 4700 feet on the northwest side of the mountain and from 3800 to 4000 feet on the south slope. The dominant plants are Canada Hemlock and Great Laurel. Scattered Red Spruce (*Picea rubens*), Black Locust (*Robinia pseudo-acacia*), Umbrella Tree (*Magnolia fraseri*), Serviceberry (*Amelanchier arborea*), and Cherry Birch (*Betula lenta*) are also present.

The Glades ["first transition area" of Alexander (1973)] occupy scattered sites between 4700 and 5000 feet on the northwest side of the mountain and about 4300 to 4400 feet on the south slope. These glades have an open understory with grass covering the forest floor. The overstory is composed mostly of hardwoods, the most abundant being Red Oak, White Ash (*Fraxinus americana*), Fire Cherry (*Prunus pensylvanica*), and scattered Beech. Canada Hemlock and Red Spruce are also present.

Between 5000 and 5400 feet (again lower on the south slope) is a broad transition area less open than the Glades; however, conspicuous trees are similar with a scattering of

TABLE 1. Elevation and habitat distribution of the summer bird fauna of Grandfather Mountain, N.C. Definition of symbols: * new nesting-season record for area; ● seen soaring above this habitat. Bar distributions indicate relative abundance and lowest and highest elevations recorded in this study.



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Fig. 1. Along the crest of Grandfather Mountain, the spruce-fir forest is stunted and bannered by the prevailing winter winds, which may exceed 100 mph.

Fraser's Fir (*Abies fraseri*) and with Red Spruce becoming abundant. Yellow Birch, Sugar Maple, and Striped Maple are more common than at lower elevations, and various viburnums dominate the understory. Scattered throughout are partial openings claimed by *Rubus* and various saplings.

The spruce-fir forest, 5400 to 5964 feet (starting at about 5000 feet on south slope) is dominated by lichen-covered Fraser's Fir and Red Spruce, but Yellow Birch, Red-berried Elder (*Sambucus pubens*), and Mountain Ash (*Sorbus americana*) are also common. An undergrowth of Mountain Rosebay (*Rhododendron catawbiense*), or Spineless Blackberry (*Rubus canadensis*) predominate in many areas. A dense, damp ground cover of various ferns, Mountain Fern Moss (*Hylocomium splendens*), Bluebead-lily (*Clintonia borealis*), False Lily of the Valley (*Maianthemum canadense*), and Common Wood Sorrel (*Oxalis acetosella*) occurs throughout this zone. Standing dead spruce and firs are common but seem to be little used by cavity nesters. At higher sites the trees obtain stunted and bannered growth forms (Fig. 1) from prevailing winter winds. (Winds of over 100 mph have been recorded, and gusts of nearly that intensity are not uncommon. A high-wind record of 161 mph has been documented.) These areas are similar to the subalpine zones of the Rockies and other higher mountain chains.

The balds occur on scattered, open rocky areas and in windswept gaps between peaks (Fig. 2). They are dominated by either grasses and sedges or low trees and shrubs such as Mountain Rosebay, spruce, fir, Red Maple (*Acer rubrum*), Sassafras (*Sassafras albidum*), Sand Myrtle (*Leiophyllum buxifolium*), and alder (*Alnus* sp.). Most balds are small and are so completely surrounded by forest with broad ecotonal areas that characterizing the breeding-bird fauna is difficult.



Fig. 2. Grassy and shrubby mountain balds provide suitable habitat for birds of open habitats on predominantly forested Grandfather Mountain.

Interestingly, Bruner and Field (1912) and Metcalf and Wells (1926) provide brief sketches of the plant communities of Grandfather Mountain. Our field work indicates that the mountain plant communities have not exhibited any major changes in the last 70 years.

SUMMER BIRD LIFE

In this study we documented 84 species of nesting birds on Grandfather Mountain and its lower slopes. Several of these are quite interesting zoogeographically, and one represents a new breeding-season record for the state. An additional 20 to 30 nesting species could reasonably be expected on the mountain. Even without the finding of additional species, those reported in this study document a remarkably diverse assemblage of nesting birds for such a small geographical area in the Southeast. This diversity is obviously a direct reflection of the variation of plant communities dictated by the elevational gradient.

In a brief comparison to the number of breeding birds reported here, Potter and LeGrand (1980) in a 1-day survey reported 27 species from Roan Mountain (Mitchell County), at elevations ranging from 5000 to 6285 feet. McConnell and McConnell (1983) listed 45 species from the Unicoi Mountains (10 miles of ridge, 4000 to 5472 feet). Simpson (1976) recorded about 100 breeding species from the Plott Balsam Mountains, this being a rather large area (about 17.5 miles in length) with considerable elevational variation. The Plott Balsams had been studied, though discontinuously, since the 1880s. Thus, the breeding fauna of Grandfather Mountain comes closer to what could normally be expected for an entire mountain chain rather than a single peak.

The birds identified appear in Table 1. The more geographically interesting and unusual summering species are discussed below.

Sharp-shinned Hawk (*Accipiter striatus*): We encountered single birds on various dates throughout the summer, the latest being 11 July. All sightings were at elevations above 5000 feet, and adults were seen frequently around Calloway Peak (5964 feet), once carrying prey. This represents the sixth recently published record indicating breeding for the mountain region. Meyer and Mueller (1982) provided a summary of the breeding-season records for North Carolina since 1960.

Ruffed Grouse (*Bonasa umbellus*): This is the only bird typical of high elevations and reported by others (Alexander 1973, Bruner and Field 1912) that we did not personally encounter. Staff members of Grandfather Mountain stated that the species is still present.

Great Horned Owl (*Bubo virginianus*): Although it is not unusual to find these owls in the mountains, Grandfather Mountain was chosen for the first Peregrine Falcon hacking station in the southern Appalachians because of its supposed lack of resident Great Horned Owls, which are known to prey on unattended falcon chicks. Individuals were heard in areas below the Glades, and Tarr saw one once in the spruce-fir zone.

Long-eared Owl (*Asio otus*): First heard on 15 June (Audet) in the early evening in Glades on the north side of the mountain (4600 feet), it vocalized characteristic hoots for more than 5 minutes. The bird or birds were heard as late as 26 July by Lee, who camped for three nights specifically to listen for these owls. On 25 July an owl, assumed to be this species, was heard giving two loud "sissch" sounds. Two summer interns working for the museum camped in the same Glade from 17 to 20 July and heard an owl each night. Based on their description, it was certainly a Long-eared Owl. This record is the first breeding-season report of a Long-eared Owl south of Mount Rogers, Virginia. Because these owls seldom vocalize away from nesting sites, it is likely that this represents an extension of the documented breeding range. The secretive nature of Long-eared Owls and the remoteness of the area make it possible for the species to have nested locally for many years without being detected. It is reasonable to assume that these owls occur at other sites in the western part of North Carolina and adjacent Tennessee. Furthermore, this does not appear to be a case of recent range expansion. Robbins and Boon (in press), for example, note that Long-eared Owls have disappeared as part of the native breeding fauna of western Maryland. Thus, it seems unlikely that these birds are simply increasing in the Southeast.

Northern Saw-whet Owl (*Aegolius acadicus*): These owls were encountered by Lee on two occasions. One was seen on 9 July near the entrance to Black Rock Cliffs Cave. Canada Warblers (*Wilsonia canadensis*) and a Red Squirrel (*Tamiasciurus hudsonicus*) were fussing at a young owl (white face) just before dusk. On 25 July a single bird was heard in Glades on the north side of the mountain. These new breeding sites are on opposite sides of the mountain (elevation between 4600 and 4750 feet), and they partly bridge a 75- to 100-mile hiatus in the documented range of this seldom encountered owl. The nearest other known sites are Roan Mountain, Mount Mitchell, and Mount Rogers (Fig. 3). Simpson (1972b) summarized the

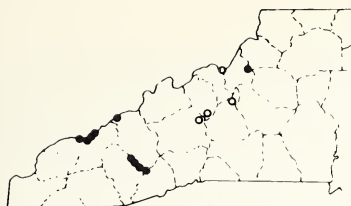


Fig. 3. Northern Saw-whet Owl



Fig. 4. Black-capped Chickadee

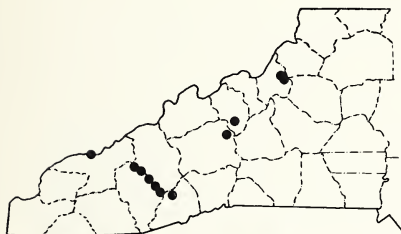


Fig. 5. Hermit Thrush

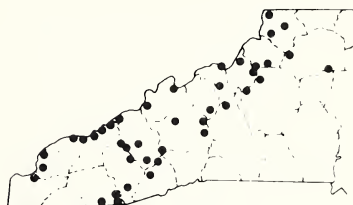


Fig. 6. Dark-eyed Junco.

Fig. 3-6. The above range maps illustrate the sites of known breeding in North Carolina for four species that are, at this latitude, confined to the mountains. Open circles in the Black-capped Chickadee map (Fig. 4) indicate former breeding. No nest has yet been found in the state for the Hermit Thrush (Fig. 5), but the several territorial males are presumed to have had mates. Darkened areas on the North American insert maps indicate the general breeding distribution for these species.

known breeding-season geographic and ecological distribution of the Saw-whet Owl in the Great Balsam Mountains and commented on its distribution and status in the Southeast. As Simpson suggested, the owls were living in the transition areas below the spruce-fir zone, not in it. Audet and Tarr did not hear any of these birds during their summer of camping on Grandfather Mountain at 5900 feet.

Least Flycatcher (*Empidonax minimus*): This flycatcher is fairly common in the margins of deciduous woodlands up to 4000 feet. Wray and Wray (1948) noted nesting as early as 13 May at Pineola.

Common Raven (*Corvus corax*): Grandfather Mountain may be the best place to watch ravens in the southern Appalachians. We have seen as many as 10 at one time playing on updrafts of the higher slopes. They constantly visit all communities discussed but nest and roost only on cliffs and ledges above 5000 feet. Although we estimate that as many as 15 pairs of ravens may nest on the mountain, we were unable to confirm this.

Black-capped Chickadee (*Parus atricapillus*): The occurrence of an extant population of Black-capped Chickadees on Grandfather Mountain may be the single most interesting find of this study. These birds were previously known from the nearby Black Mountains (including Mount Mitchell, Brewster 1886), but by the 1930s these birds had been extirpated as a result of extensive logging (Tanner 1952, Simpson 1977). The historic status of Black-capped Chickadees on Roan Mountain is not clear, but they currently do not occur during the nesting season. Within North Carolina these chickadees have been found since the 1930s only in the Great Smoky Mountains and in the Plott Balsam Mountains (Fig. 4). To the north they still nest on Mount Rogers in Virginia (Scott 1975). On Grandfather we encountered Black-capped at only a few sites (three family groups) in spruce-fir forests above 5000 feet. It is somewhat surprising that the birds' presence during the breeding season went undetected for so long, in spite of a 1975 Christmas Bird Count report from Avery County listing the species (Chat 40:41). These birds, like others reported in the state outside the known breeding range, were assumed to have been migrants from the north. Apparently, Black-capped Chickadees never have been abundant on Grandfather Mountain, for they were not found by Bruner and Field (1912) or Alexander (1973). Of all the birds found on Grandfather, this species appears to be most dependent on the spruce-fir zone. Because this zone is rather limited on Grandfather Mountain, it is especially surprising for these birds to nest here. Perhaps the unusually rugged nature of this mountain kept the logging from being as intense as it was in other high-elevation areas in northwestern North Carolina.

Brown Creeper (*Certhia familiaris*): One was seen and heard singing at Calloway Gap (5600+ feet) during June. The bird's behavior suggested a nest was nearby, but none was located. This represents a rather high elevational record for the Brown Creeper.

Hermit Thrush (*Catharus guttatus*): A single bird was heard on 25 July adjacent to a partial clearing in the spruce-fir forest above Shanty Springs (5500 feet). Potter and LeGrand (1980) first reported this species during the breeding season in North Carolina from Roan Mountain, and it has been encountered subsequently (Amer. Birds 37:989). In 1983 several individuals were heard on Mount Mitchell (Chat

48:24). These three localities are the southernmost breeding-season stations in eastern North America and apparently represent a recent local range expansion (Fig. 5).

Warbling Vireo (*Vireo gilvus*): A single bird was heard and seen on 26 July at 2200 feet along a stream flood plain at the base of Grandfather Mountain. This is one of the few North Carolina localities where this vireo is known to reside in the summer months.

Black-throated Green Warbler (*Dendroica virens*): Extremely abundant in the Glades on Shanty Springs Trail, this warbler was seldom encountered elsewhere. One was heard in a clearing in the spruce-fir forest. Birds sang continuously from dawn to dusk and were still in full song as late as 26 July. Alexander (1973) found the species confined to the Glades area.

Red Crossbill (*Loxia curvirostra*): Birds were seen in flocks at high elevations (5500+ feet) on 27 May and 6, 8, and 29 June. They were heard singing on several other occasions.

Dark-eyed Junco (*Junco hyemalis*): Males were singing and actively defending territories as early as 24 March, and nest construction was under way as late as 24 July. This species is most abundant around openings at high elevations. Juncos are very uncommon below 4000 feet on Grandfather Mountain. The breeding-season distribution of this common mountain species is illustrated in Figure 6.

Many of the species discussed above and others listed in Table 1 are confined, at our latitude, to the Appalachian Mountains at high or intermediate elevations; several such populations are regarded as distinct, endemic southern Appalachian races. At least 19 avian species reach the southern limit of their known breeding distribution in eastern North America in the mountains of western North Carolina and eastern Tennessee. These are Ruffed Grouse, Long-eared Owl, Northern Saw-whet Owl, Least Flycatcher, Common Raven, Black-capped Chickadee, Red-breasted Nuthatch, Brown Creeper, Winter Wren, Golden-crowned Kinglet, Veery, Warbling Vireo, Chestnut-sided Warbler, Black-throated Blue Warbler, Blackburnian Warbler, Canada Warbler, Rose-breasted Grosbeak, Dark-eyed Junco, and Red Crossbill.

Several breeding species, mostly or exclusively confined to the southern Appalachians at our latitude, can be expected in summer on Grandfather Mountain but to date have not been found nesting there, although some have been seen on dates just outside expected breeding periods. These include Black-billed Cuckoo (13 May, 3500 feet; 29 September, 4500 feet; almost certainly a summer resident), Yellow-bellied Sapsucker (11 April, 13 May, 19 October; 4000 to 4500 feet), Alder Flycatcher, Olive-sided Flycatcher, Tree Swallow, Bewick's Wren, Northern Oriole, Vesper Sparrow, and Savannah Sparrow. Other potential nesting species that have been recorded on Grandfather Mountain include Peregrine Falcon (fall migrants), Yellow-billed Cuckoo (13 May, 3500 feet), Eastern Kingbird (13 May, 3500 feet), Yellow-bellied Flycatcher (29 May, 5500 feet), Tree Swallow (13 May, 3500 feet), Loggerhead Shrike (13 May, 3500 feet), Yellow-throated Vireo (1 May, 13 May, 16 September; 4000 to 5800 feet), Yellow Warbler (13 May, 3500 feet), Pine Warbler (13 May, 3500 feet), Yellow-breasted Chat (13 May, 3500 feet), and Blue Grosbeak (13 May, 3500 feet). Several

additional species (e.g. Swainson's Thrush, Magnolia Warbler, and Purple Finch) breed in the mountains of Virginia (Scott 1975) and could reasonably be expected in summer on Grandfather Mountain.

Of the 84 species presented in Table 1, twenty-one are not typically inhabitants of the natural vegetative zones discussed, or at least we did not find them in natural habitats on Grandfather Mountain. They are in fact dependent to semi-dependent on artificial clearings and other man-influenced habitats. Although many could occur on the mountain in natural temporary clearings caused by fire or storms, or around beaver ponds, we did not find them in such habitats. These species include Northern Bobwhite, Mourning Dove, Chimney Swift, Least Flycatcher, Eastern Phoebe, Purple Martin, Northern Rough-winged Swallow, Barn Swallow, Carolina Wren, Eastern Bluebird, Northern Mockingbird, Brown Thrasher, European Starling, House Sparrow, Red-winged Blackbird, Eastern Meadowlark, Common Grackle, Brown-headed Cowbird, Orchard Oriole, Chipping Sparrow, and Song Sparrow. With the exception of the Least Flycatcher, these are wide-ranging species in North Carolina.

Highest total density was recorded at high elevations, whereas lower density, but greater species diversity, was apparent at intermediate and low elevations and in disturbed areas. For some individual species (Winter Wren, Red-breasted Nuthatch, Golden-crowned Kinglet, and Dark-eyed Junco) population density also increased with elevation.

SUMMARY AND FUTURE STUDIES

In addition to compiling seasonal lists, the North Carolina State Museum is currently involved in a long-range study of the elevation/plant community requirements and relative abundance of the birds and mammals of Grandfather Mountain. This paper is an outgrowth of the preliminary field work for the long-range study. There is probably no other place in the southern Appalachians where such extremes in elevation exist in such close proximity. In a straight-line distance of only 6 miles one can climb from 1600 to 5964 feet above sea level from the base of the mountain in the upper piedmont to the summit. On most other high peaks in the southern Appalachians, the lowest slopes start from relatively high elevations. On Grandfather the altitudinal shifts in natural vegetative communities are striking, and scattered throughout the higher elevations are mountain balds and glades; at lower elevations, particularly along streams, there are hemlock-rhododendron communities. Further enhancing the species diversity are cleared farmlands, rural communities, farm ponds, and impounded lakes. It is likely that nowhere else in North Carolina is such a rich diversity of breeding birds attained in such a restricted area as Grandfather Mountain. With even a modest amount of additional field work, well over half of the state's nesting bird fauna may be documented from an area of less than 10 square miles.

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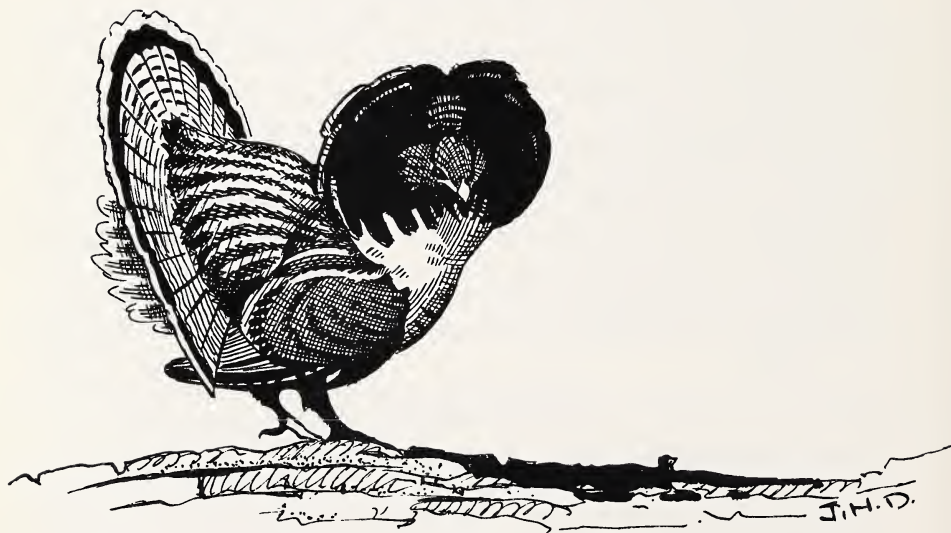
mountain, and Mary K. Clark, while conducting a parallel study on the mammals of the area, assisted in the bird survey and processed the habitat photographs accompanying this article. Maps are from a distributional survey of the state's breeding birds, which is to be published by the museum and the North Carolina Biological Survey. This is contribution 1985-3 of the North Carolina Biological Survey.

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North Carolina State Museum of Natural History, P.O. Box 27647, Raleigh, N.C.; Frostburg State College, Frostburg, Maryland; and University of Wisconsin, Madison, Wisconsin.





Roundtable

... with Louis C. Fink

The Art of Pishing

Pishing is the gentle art of making all manner of strange hissing and cheeping sounds in the interest of bringing birds from where you can't see them to where you can see them. The theory is that birds are very curious and that they will investigate sounds that resemble the alarm notes of their own or other species. It is not always easy to explain this to passersby, so some bird-watchers do their pishing when alone or in the company of other pishers.

My principal complaint about pishing is that it doesn't always work. Often it yields only a dry mouth and acute frustration. I will admit, however, that some areas are better than others for the practice of pishing or pish-wishing, to be more phonetic. In my experience, one of the best locations is the Blue Ridge Parkway, though I don't know why. Just a modest amount of pishing in one place produced a catbird, chestnut-sided warbler, black-throated blue warbler, and an unidentified warbler that allowed me one split-second glimpse before disappearing back into a denser thicket. Even intense and sustained pishing did not produce a "curtain call."

I quickly forgot the vanished warbler when a male indigo bunting flew across the parkway and perched on a bare limb about thirty feet up. A close view of that dazzling blue plumage is enough to make me dismiss an uncooperative warbler from my thoughts any day. Especially when the bunting stays in view to cheerfullize me with its effervescent song of pure joy.

A little farther along the parkway I heard a slate-colored junco singing. One hadn't been on my annual list for several years, so I decided to stop and try to locate it. Upon entering a clearing no more than fifty feet off the parkway, I caught my breath as a deer jumped up just ahead of me and displayed his white tail as he disappeared into the woods. For a double reward, the junco was sitting atop an old snag, trilling its even-cadenced song.

As I watched, I thought about the people driving by. It's hard to believe, but some folks drive the Blue Ridge Parkway and never do any walking except to get some food or go to the restroom. They stop at some overlooks but don't get out of the car. They'll go home and tell their friends they have seen the Parkway. They have, it's true, but too bad they didn't *experience* it while they had the chance. Not just for the junco's song but the rustling of the poplars, the deer in a clearing, and perhaps a raven swinging on a thermal.—Excerpted with permission from *Mountain Lake Almanac* by KEN MORRISON, published by the Pineapple Press. This new book contains 101 entries that

vary from sensitive and amusing nature observations to hard-hitting views about what must be done to protect our environment. Roger Tory Peterson says, "This book is an event." A former editor of *Audubon*, Ken Morrison has been both observing and fighting for our natural heritage for more than 40 years. The soft-cover edition is \$8.95, hard-cover is \$11.95. Both are available from book sellers or by mail from Mountain Lake Almanac, P.O. Box 673, Frostproof, Florida 33843. Mailing charge is \$1.50 per copy.

Newspaper Gleanings

Environmentalists in Louisiana are fighting to save 22 Red-cockaded Woodpeckers threatened by gas wells on D'Arbonne National Wildlife Refuge. Drilling rights were granted before the Refuge was created.

In general, Bald Eagle populations are up: 11,819 wintering in the 48 contiguous States, compared with 9,815 three years ago. The largest gathering is said to be in Glacier National Park, which plays host to as many as 1,000 eagles feeding on salmon.

Waterfowl hunters must buy a "duck stamp"; this year it shows a Cinnamon Teal by Gerald Mobley of Broken Arrow, Oklahoma. He gets no fee for the stamp, but may make tens of thousands of prints. In the past, some winning artists are said to have earned a million dollars.

There were 167 Whooping Cranes in North America last September, but seven of them died from a suspected virus carried by insects. The population was down to 15 birds in 1941. (Your reporter remembers seeing 44 out of the total population of 56 in 1970.) The deaths this year occurred at the breeding program in Patuxent, Maryland.

In Springfield, Massachusetts, a golf driving range was opened. Gulls decided the golf balls were clams, picked them up, and tried to crack them by dropping them on paved roads. The range was forced to close!

Down near Sanibel Island, Florida, a fisherman found two baby Ospreys clinging to a nest that was about to sink under the waves. Naturalist Mark Westall decided to put the chicks in a nest in the wild—and the idea worked. The adult birds adopted the chicks, and they grew to maturity. Westall says this is better than trying to raise such birds in captivity.

From the Editor's Mailbox

Regarding the matter of warblers ingesting grit (Chat 47:103-104 and 48:72,84), Martha Frederick, of Tryon, N.C., writes:

"Could it be that salt had been used to defrost ice during the winter? Salt is also used on highways, which might explain birds feeding on narrow strips of ground after snow removal." Martha's comments remind me that neighbor Gladys Baker said that birds were attracted to the ground where her mother used to empty the dishwasher, which was undoubtedly a salty spot. Emptying salt water from an ice-cream freezer outdoors might also provide a salt lick for the birds.

Mike Dunn, of Seven Springs, N.C., inquires about the significance of behavior he noted in the summer of 1983 and again in late June of 1984:

"I have seen House Sparrows snap off and fly away with the full blossoms from a common roadside wildflower, the Man-root (*Ipomoea pandurata*), a species of white flowering morning glory. This is an odd-looking sight because the blossoms are often as big as the bird itself. [Can anyone] suggest an explanation for this ... nesting material, perhaps? Mistaken identity owing to the flower's resemblance to toilet paper or other commonly used nesting materials?" Please let us know if you can think of a better explanation than gathering nesting material.

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Two Records of the Franklin's Gull for North Carolina

HARRY E. LeGRAND JR.

331 Yadkin Drive
Raleigh, N.C. 27609

WILLIAM C. HUNTER

Department of Zoology
Arizona State University
Tempe, Arizona 85334

At approximately 1500 on 8 October 1983, William Hunter spotted a gull resting with a flock of adult winter-plumaged Laughing Gulls (*Larus atricilla*) at the large tidal pond at Cape Hatteras, Dare County, N.C. Though the bird was sitting and had its head tucked, the very dark area on the back of the head and nape was noticeable. The brown upper wing coverts indicated that the age of the bird was probably first-year. With a partial black hood, the bird could not have been a Laughing Gull; it was identified as a first-winter Franklin's Gull (*L. pipixcan*). This identification was agreed upon by other observers, including Wayne Klockner and Hal Wierenga. The bird was studied under excellent lighting conditions, as closely as 20 m through 20X scopes and 10X binoculars. (Wierenga has submitted extensive notes of this observation to the senior author, who has given a copy to the N.C. State Museum of Natural History for additional documentation.)

The following field marks of the Franklin's Gull were compared with those of nearby adult and first-winter Laughing Gulls. The bird was smaller in size, and its black bill was shorter, straighter, and narrower than the Laughing Gulls' bills. The back of the head was black, the hind neck and the forehead were white, and a partial eye ring was white and contrasted strongly with the black nape and crown. The mantle and scapulars were gray, similar to those of the adult Laughing Gulls. The upper wing coverts were brown-tipped. The sides of the throat and sides of the upper breast were light dingy gray, and the rest of the underparts were white. The legs were black. When the bird was flushed, it was more reluctant to fly than the surrounding Laughing Gulls, which took off immediately. Flushing confirmed that the tail had a complete black subterminal band, except for solid white outer rectrices. The under wing coverts were noticeably white, and in flight the upper wing coverts were brown-gray with primaries and secondaries dark brown or black.

On the morning of 31 March 1984, Harry LeGrand observed a "black-hooded" gull at Greenview Farm just south of Raleigh, N.C. It, along with approximately 10 Ring-billed Gulls (*L. delawarensis*), was standing on the ground, presumably feeding on insects in a closely grazed pasture. LeGrand was able to approach within 50 m and observed the following marks: a blackish hood with wide white "eyebrows," a fairly slender sooty-red bill, a medium gray back followed by a white and a black band near the wing tip, and dusky legs. When the bird flushed, the wings showed the white band on the primaries that separated the gray mantle from the black near the tips of the primaries. Other features that distinguished this Franklin's Gull from the somewhat similar Laughing Gull were the moderately short wings with rounded tips and a body size noticeably smaller than that of the Ring-billed Gulls.

The second gull was independently discovered several hours later by Jim Mulholland, who also identified it as a Franklin's Gull. At least a half-dozen other birders saw it later in the day and early the following day (1 April), but it was not seen thereafter.

The occurrence of the immature Franklin's Gull was apparently not related to any unusual weather features. However, the adult bird was likely brought to North Carolina by an unusually strong spring storm system. This system moved east from the southern Great Plains and passed through the Carolinas on 28 March 1984, bringing heavy rain and spawning many tornadoes.

These represent only the second and third known records of the Franklin's Gull for North Carolina. The first record is for an immature bird collected on the Catawba River near Charlotte on 13 October 1952 (Chat 17:23-24). It is likely that Franklin's Gulls are not nearly so rare in the state as the three records indicate. A few of these gulls, particularly immatures, could occur each fall on the coast and be easily overlooked among the ubiquitous Laughing Gulls. However, an inland Franklin's Gull is much less likely to be passed over as a Laughing Gull because of the latter's rarity away from tidewater areas.

Horned Larks as Breeding Birds in the Sandhills of North Carolina

PHILIP J. CRUTCHFIELD

901 Montclair Road

Fayetteville, N.C. 28304

To contemplate the idea of Horned Larks (*Eremophila alpestris*) as summer residents of the Sandhills of North Carolina consumes positive effort. Nonetheless, Greg Dearing, a local nature enthusiast, informed me that he and his brother, James Dearing, had found them on the Fort Bragg Military Reservation about the middle of July. The birds were seen along a dirt runway on the Saint Mere Eqlise Drop Zone.

Permission was obtained to visit the site, and my first sighting occurred on 21 July 1982. I was accompanied by Terry Myers, who is a Wildlife Biologist with the Fort Bragg Wildlife Branch of the Directorate of Engineering and Housing. In about an hour we saw 25 to 27 Horned Larks, including perhaps five males and two or three females. The rest appeared to be immature birds. Several observations were made of adults feeding immature birds.

Because Myers and another biologist, Tommy Hughes, had seen four or five Horned Larks on or about 26 May 1982 in an area adjacent the Installation Landfill, we decided to check this area. Shortly after our arrival at the landfill, we located the larks. There were about 15 to 17 birds, and we were able to distinguish three or four males. The rest appeared to be immatures. Although female birds were missed or were inconspicuous, we again noticed adult birds feeding young.

When I visited the landfill again on 24 July 1982, I was accompanied by Henry Rankin Jr. and my son, Jim Crutchfield. Our activity seemed to agitate the birds, so an accurate count was not possible; however, we saw about 15 to 20 birds. On this occasion we were able to determine the composition of the population, which contained about 3 or 4 males, 2 or 3 females, and 10 to 13 immature birds. Adults, mostly males, were again feeding immatures. Two feeding procedures were noted. (1) An immature bird would position itself close by a male and go into a posturing behavior by fluffing its feathers, fluttering its wings, spreading them in a hover position, and uttering a series of call notes until fed. The young bird would then follow the adult by walking. (2) Two birds would appear more or less together, but independently foraging across an area. The adult male would pick up an insect and walk over to the other bird, placing the insect in its beak. The adult male would then walk away, continuing to forage. Occasionally a stray bird, presumably an immature, would intrude and be promptly chased away by the male.

The currently understood summer range of the Horned Lark in North Carolina is essentially west of the fall line (Peterson 1980, Potter et al. 1980). Horned Larks are considered rare during the summer in those coastal-plain counties of the Sandhills adjacent the piedmont, and no evidence of breeding has been reported previously. Additionally, no summer records were known for Cumberland County during the past 70 years.

Our evidence of breeding came from observations of various types of breeding behavior and from specimens. On 21 July 1982 there was an instance of territorial display by a single male at the landfill site. Numerous observations were made of adults (mostly males) feeding immature birds at both sites on 21 July and at the one site on 24 July 1982. Because larks generally remain in the vicinity of established colonies, especially in the southern portions of their ranges (Potter et al. 1980), any adult-young feeding behavior can be assumed to be associated with the breeding site. The presence of larks at the landfill site through December 1982 and through April 1983 further bears out this idea. No nests were discovered.

An additional site was discovered on the Fort Bragg Military Reservation on 29 April 1983 in the vicinity of the Jump School Parachute Tower. A pair of birds was encountered. On 9 May 1983, only the male was seen here.

The habitat at all Fort Bragg sites is typical of that normally preferred by the species, that is, stubble fields, airports, and other areas of short vegetation and bare earth.

The Saint Mere Eqlise Drop Zone is situated along the southern edge of the Fort Bragg Military Reservation in Hoke County in the Puppy Creek Drainage of the Rock Fish Creek System. The area comprises 700 to 800 acres with a rolling terrain quite characteristic of the Sandhills. As a drop zone, the area is being maintained in a vegetative stage of succession called the perennial grass stage, which resembles a grassland. In the late summer, it supports combinations of medium-tall grasses, of which

broomstraw (*Andropogon* sp.) and wire grass (*Aristida* sp.) are characteristic along with forbaceous species that mostly belong to the Aster, Figwort, and Legume families. In the area adjacent the dirt runways, the vegetation is shorter in stature with patches of bare earth, a feature of more recent disturbance. The vegetation is of low-growing annual plants that include crabgrass (*Digitaria* sp.), horseweed (*Erigeron* sp.), and lespedeza (*Lespedeza* sp.).

The landfill site is on the Fort Bragg Military Reservation in Cumberland County. Situated on a hillside, it covers perhaps 100 acres. Only some 10 acres of recently reclaimed land is presently being inhabited by the larks. The plant cover is in the early stages of secondary succession as described by Oosting (1942). It features mostly low-growing annual plants along with legume plantings of flat pea (*Lathyrus* sp.), lespedeza, partridge pea (*Cassia* sp.), and sweet clover (*Melilotus* sp.). These were planted by personnel of the Fort Bragg Wildlife Branch.

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A Brown Thrasher with an Aberrant Culmen

WILLIAM POST

Charleston Museum

Charleston, S.C. 29403

On or about 15 January 1979 a female Brown Thrasher (*Toxostoma rufum*) with an extremely long beak was found dead in a suburban yard in Sumter, Sumter County, S.C. The collector is unknown. The specimen was salvaged by the S.C. Wildlife and Marine Resources Department. The carcass was prepared as a study skin (CM No. 1984.51).

The length (chord) of this individual's maxilla from the base of the skull is 105 mm. The mandible, which appears to have been broken, is 66 mm. In addition to their unusual length (Fig. 1), each element is twisted to the left, the maxilla more so than the mandible, so that viewed dorsally, the beak is crossed.

The average maxilla (exposed culmen) length of 10 normal Brown Thrashers in the Charleston Museum is 25.3 mm., 24% that of the aberrant specimen.

The individual weighed 44 g when received at the museum, and although it was dehydrated, this is still considerably less than the 67.6 g average of four Brown Thrashers banded on Sullivan's Island in October 1983. The low weight of the thrasher suggests that it starved. It is astounding that it survived for the length of time it took the beak to attain such an abnormal length.



Fig. 1. Brown Thrasher with deformed bill.

I appreciate the help of Tom Murphy, SCWMR, who salvaged the specimen, and Julian Harrison, who contributed the specimen to the state collection. The skin was prepared by Beverly Ammons. Jo Fetzer made the photograph, and Nancy Pringle prepared the manuscript.

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1984 unless otherwise indicated)

BLACK-CAPPED PETREL: Chris Haney spent the period of 4 to 14 June on a research ship 90 to 110 miles from land, off Georgia and South Carolina. He observed 116 petrels during this time, of which about 50% were in South Carolina waters. Unlike the situation in the Cape Hatteras area of North Carolina, where Black-cappeds occur within 30 miles of land, the species in South Carolina seldom has been seen within 70 or 80 miles of land, as evidenced by the almost complete lack of records on 1-day trips out of Charleston.

CORY'S SHEARWATER: A good count for South Carolina was 111+ on 24 June, as noted by Dennis Forsythe off Charleston.

GREATER SHEARWATER: This species was present in greater than usual numbers off Oregon Inlet, N.C., this summer. Dave Lee had 420 on 26 June, 110 on the following day, and 52 on 31 July. Dennis Forsythe had an excellent South Carolina total of 150+ off Charleston on 24 June.

AUDUBON'S SHEARWATER: From 4 to 14 June, Chris Haney observed 750 off the coasts of South Carolina and Georgia; most were 90 miles SE of Charleston.

LEACH'S STORM-PETREL: Formerly considered very rare or casual in summer, numerous individuals were found off Oregon Inlet by Dave Lee: a remarkable 47 on 26 June, 16 on 27 June, and 5 on 31 July. Chris Haney had an apparent South Carolina record count of nine on 13 June, 90 miles SE of Charleston.

BAND-RUMPED STORM-PETREL: Now regular in rather small numbers in summer, good totals were reported this season. A record North Carolina count was 22+ seen by Dave Lee on 26 June off Oregon Inlet; he also observed seven on 27 June and four on 31 July in that same area. Off South Carolina were singles seen on 13 June about 110 miles E of Hilton Head Island (Chris Haney) and on 7 August off Charleston (Dennis Forsythe party).

WHITE-TAILED TROPICBIRD: An adult was seen 70 miles off Charleston on 8 June by R. Scott and Billy Knight, and these observers saw an unidentified tropicbird in this area on 20 June (fide Dennis Forsythe). Chris Haney saw an adult about 90 miles SE of this city on 10 June. Another White-tailed, of unspecified age, was seen by Robert Ake, Paul DuMont, and party off Hatteras on 29 July.

MASKED BOOBY: Very rare, though occurring with some regularity in recent years, was one seen off Hatteras on 29 July by Robert Ake, Paul DuMont, and others.

AMERICAN WHITE PELICAN: Larry Ditto saw one on a small island near Ocracoke, N.C., on 5 July.

BROWN PELICAN: Pelicans have expanded their breeding range in North Carolina over the past two summers. In addition to established sites in Ocracoke Inlet and the lower Cape Fear River, John Weske and others have found colonies near Cape Lookout, near Drum Inlet, and at Oregon Inlet, where 65 pairs were nesting in 1984.

DOUBLE-CRESTED CORMORANT: Noteworthy inland in midsummer were single birds at Greenville, N.C., on 10 June (Harry LeGrand) and at Lake Townsend near Greensboro, N.C., from 14 July to 1 August (Herb Hendrickson).

LEAST BITTERN: Excellent counts were 13 noted by Douglas McNair on 9 May at Santee National Wildlife Refuge, S.C., and 18+ seen and heard in northern Pamlico County, N.C., on 15 July by Philip Crutchfield.

REDDISH EGRET: One of the few Carolina records of an immature was one seen and photographed by David and Mary Field, and later by others, at Huntington Beach State Park,

S.C., from 24 July to 1 August. [The surprising scarcity of records of immatures, which should be more numerous than adults in the Carolinas, is probably in part due to the inaccurate treatment of the species in the field guides. Only the recently published National Geographic Society *Field Guide to the Birds of North America* (1983) describes and illustrates the immature plumage.—HEL]

CATTLE EGRET: Notable inland totals, both on 17 June, were five observed near Umstead State Park, N.C. (Ray Johnston, Edward Farr), and 26 seen on the Bishopville, S.C., Breeding Bird Survey route (Charlie Wooten).

BLACK-CROWNED NIGHT-HERON: Ricky Davis observed an immature in flight at the Neuse River east of Raleigh on 30 July.

YELLOW-CROWNED NIGHT-HERON: For the second consecutive nesting season, several adults were seen at a pond at Winthrop College in Rock Hill, S.C. (fide Albert Conway); breeding seems likely in the vicinity. An immature was seen near Whispering Pines, N.C., on 18 July by Jay Carter, Dick Thomas, and Skip Vetter.

WHITE IBIS: Very rare for the mountains was an immature seen by Ron Warner in a wet roadside ditch near Smokemont in the Great Smoky Mountains National Park, N.C. The date was 23 July. Also unusual were 10 adults at Lake Townsend near Greensboro on 20 July (Sue Moore, Bobbie Page, Ramona Snively).

BLUE-WINGED TEAL: A male, seemingly out of range, was at Magnolia Gardens near Charleston, as seen by Douglas McNair on 5 June.

RING-NECKED DUCK: A male presumably summered near Townville, S.C., as Charlie Wooten saw it on 27 May and again on 22 July. Philip Crutchfield saw another in northern Pamlico County on 15 July.

OLDSQUAW: As many as 12 were seen on Lake Norman, N.C., from mid-December 1983 to late January by Billy Totten, fide Paul Hart.

RUDDY DUCK: Infrequently seen in midsummer were a male at Sunset Beach, N.C., on 2 June and again on 1 July (Philip Crutchfield) and one at Cape Hatteras, N.C., on 26 June (Kent and Karen Van Vuren).

COMMON MERGANSER: Merrill Lynch observed a female on the extremely early date of 4 August at Roanoke Rapids Lake, N.C. He believes that this is probably the same bird that was there in August 1983.

SWALLOW-TAILED KITE: One was seen in the Pee Dee River swamp near Yauhannah, S.C., on 4 June by Douglas McNair. This site is over 30 miles NE of the established edge of the breeding range (along the Santee River).

BALD EAGLE: Nonbreeding individuals were seen during the summer in central North Carolina at Falls Lake (Tom Howard), Jordan Lake (Bill Wagner et al.), Roanoke Rapids Lake (Merrill and Karen Lynch), and Medoc Mountain State Park (Randy Yelverton).

COOPER'S HAWK: Individuals were seen in June near Charleston (Perry Nugent, Charlie Walters, and party) and in North Carolina near Southern Pines (Jay Carter), Raleigh (Wayne Irvin), Falls Lake (Tom Howard), and northwestern Orange County (Allen Bryan). Philip Crutchfield saw birds near Fayetteville on 28 May and 12 July. Surprisingly, no one reported a Sharp-shinned Hawk in late May or June.

AMERICAN COOT: Douglas McNair observed 40 at South Island, S.C., on 13 May. One bird appeared disturbed by his presence, possibly a sign of breeding activity.

BLACK-BELLIED PLOVER: Very late was one seen and heard by Douglas McNair at McKinney Fish Hatchery in Richmond County, N.C., on 24 December 1983.

LESSER GOLDEN-PLOVER: Very rare for early summer was one in breeding plumage seen by Paul Buckley at Portsmouth Island, N.C., on 21 June.

PIPING PLOVER: Nesting continues to occur at the southern limit of the range at Sunset Beach, N.C., where Philip Crutchfield saw a pair with two chicks on 1 June.

- BLACK-NECKED STILT:** Breeding probably occurred at an impoundment in Beaufort County, N.C., east of Aurora. Stephen Prior and Jeffrey Bruton saw 10 to 12 birds there from 11 July to 1 August. One was also seen at Morris Island, S.C., on 4 August by Perry Nugent and Charlie Walters.
- AMERICAN AVOCET:** Stephen Prior observed seven at a Texas Gulf Sulphur impoundment near Aurora, N.C., from 25 July to 13 August. Seldom reported from Huntington Beach State Park, S.C., were two on 17 July (Bill Hilton Jr.).
- LESSER YELLOWLEGS:** A good count of 80 was made by Jay Carter and party near Whispering Pines, N.C., on 18 July.
- UPLAND SANDPIPER:** Unusual in June was one seen on the 21st at Beaufort, N.C., by Paul Buckley. Fall migrants were observed inland near Raleigh on 26 and 29 July (Wayne Irvin) and on 28 July near Pineville, N.C. (Clare Walker).
- WHIMBREL:** Notable inland was one seen by Russ Rogers in a plowed field near Concord, N.C., on 31 July.
- LONG-BILLED CURLEW:** Paul Buckley saw two on Portsmouth Island, N.C., on 21 June.
- BAIRD'S SANDPIPER:** Rare and somewhat early was one noted by Charlie Wooten near Townville, S.C., on 22 July.
- PECTORAL SANDPIPER:** A very early migrant was seen on 26 June at Cape Hatteras by Kent and Karen Van Vuren.
- STILT SANDPIPER:** Jay Carter and others observed at least four near Whispering Pines, N.C., on 18 July.
- BUFF-BREASTED SANDPIPER:** One was seen by Jeremy Nance at the Cedar Island, N.C., ferry terminal on 24 August.
- LONG-BILLED DOWITCHER:** Somewhat early were two in breeding plumage on 17 July at Huntington Beach State Park (Bill Hilton Jr.).
- COMMON SNIBE:** Allen Bryan noted an early snipe on 27 July near Engelhard, N.C.
- POMARINE JAEGER:** One was seen off Charleston on 9 June by Dennis Forsythe, who also saw unidentified jaegers on pelagic trips off that city on 24 June and 15 July. Four were seen off Cape Lookout, N.C., on 5 June by John Fussell and Henry Haberyan.
- SOUTH POLAR SKUA:** Apparently the first reports for South Carolina were one photographed on 10 June about 95 miles ESE of Charleston by Chris Haney and a light-phase individual seen by Dennis Forsythe 30 miles E of that city on 24 June.
- RING-BILLED GULL:** Notable in midsummer was an adult at Lake Townsend near Greensboro from 15 to 28 July (Herb Hendrickson).
- GREAT BLACK-BACKED GULL:** An adult was seen on 4 August at Morris Island, S.C., by Perry Nugent and Charlie Walters.
- CASPIAN TERN:** This species continues to breed in small numbers along the North Carolina coast. John Weske reported a nest at Ocracoke Flats during the summer, in addition to two chicks at another nest on Clam Shoal in Pamlico Sound north of Frisco. One at Morehead City, N.C., on 17 June (John Fussell) was rare there in that month. Inland migrants were four at Roanoke Rapids Lake on 16 June (Merrill and Karen Lynch) and up to two at Lake Townsend from 21 July to 1 August (Herb Hendrickson et al.).
- ROSEATE TERN:** Two individuals, presumably migrants, were observed and well described on 4 August at Morris Island by Perry Nugent and Charlie Walters.
- ARCTIC TERN:** One of the few South Carolina reports was a late migrant seen on 13 June by Chris Haney 100 miles E of Hilton Head Island. He noted "all red bill, white cheek contrasting with gray underparts."
- BRIDLED TERN:** The best count off Charleston on Dennis Forsythe's pelagic trips was just six, on 24 June. Fairly close to shore were two seen within 15 miles of Cape Lookout by John Fussell on 5 June.

- BLACK TERN:** One was seen inland near Whispering Pines on 18 July by Jay Carter and party.
- BLACK SKIMMER:** Very unusual inland were single skimmers seen at Jordan Lake on 23 June by Megan Lynch and others (fide Tom Howard) and on Lake Moultrie, S.C., near Moncks Corner in July by Cheryl and Eddie Phillips.
- WHIP-POOR-WILL:** Perhaps on the breeding grounds were eight heard calling by Douglas McNair on 10 May in the eastern portion of Francis Marion National Forest, S.C. In that state, the species is not known to breed this close to the coast, but the date seems too late for wintering or migrating individuals.
- WILLOW FLYCATCHER:** Near the edge of the breeding range was one singing near the Dan River in extreme northeastern Rockingham County, N.C., on 16 June (Harry LeGrand). Rick Knight observed a singing bird in breeding habitat at Glen Ayre in Mitchell County, N.C., on 16 May. However, a singing Willow at Cape Lookout on 3 June (John Fussell, Henry Haberyan) was almost certainly a late migrant.
- ALDER FLYCATCHER:** An excellent count was seven singing birds noted by Rick Knight at Roan Mountain, N.C. (from Carver's Gap to Grassy Ridge), on 12 June.
- SCISSOR-TAILED FLYCATCHER:** One was seen near Merrimon, Carteret County, N.C., on 4 July by Ken and Annie Brown, fide John Fussell.
- HORNED LARK:** There are a number of reports during the summer in the upper coastal plain, along the edge of the breeding range. In North Carolina, one was seen 3 miles E of Jackson on 17 June (Merrill Lynch), three family groups totalling 10 birds were at the Greenville airport on 10 June (Lynch, Harry LeGrand), and birds were noted regularly during the summer in Nijmegen Drop Zone at Fort Bragg, Hoke County (Jay Carter). In South Carolina, nine were counted on a Breeding Bird Survey route in Lee and Kershaw Counties on 17 June (Charlie Wooten) and single birds were near Cameron on 10 May and near Creston on 17 May (Douglas McNair).
- PURPLE MARTIN:** Herb Hendrickson observed approximately 1000 flying to a roost in trees on an island at Belew's Lake near Winston-Salem, N.C. The date was 13 July.
- TREE SWALLOW:** Apparently the fourth nesting record for North Carolina was reported by Ruth and Jerry Young. They saw a pair breeding in a dead tree cavity near Swannanoa on 10 June.
- CLIFF SWALLOW:** This species is probably breeding at Clark Hill Reservoir, S.C. Cliffs were reported there in summer a few years ago, and this summer Chris Haney saw six on 17 June at the US 378 bridge at the Georgia state line. A late migrant was seen on 3 June at Cape Lookout by John Fussell and Henry Haberyan.
- BANK SWALLOW:** Late migrants were one at Cape Carteret, N.C., on 1 June (Henry Haberyan) and two at Cape Lookout on 3 June (Haberyan, John Fussell). A fairly good inland count in fall was 20, seen by Charlie Wooten near Townville, S.C., on 29 July.
- BLUE JAY:** Several spent the summer at Portsmouth Island, N.C., despite the absence of woodlands on the island, as reported by John Fussell.
- BEWICK'S WREN:** Very rare was a nonsinging individual that responded to a taped song of its species at Cable Cove Campground in northern Graham County, N.C. Ron Warner observed the wren on 20 June. Bewick's Wrens have essentially been extirpated as breeders, for unknown reasons, in the Carolinas.
- CEDAR WAXWING:** A number of nesting records, in addition to records suggestive of breeding, were reported this summer from areas outside the usual nesting range. John Connors observed a mated pair near Bunn, N.C., on 28 June and 2 July; on the latter date the birds were stripping grape vines for nesting material. He found the nest in a large Red Cedar in an open picnic area at the home of Ben L. Perry. Eloise Potter and Gladys Baker visited the site on 3 and 4 July and found another waxwing nest about 60 feet high in a nearby Loblolly Pine, as evidenced by a fledgling on the ground (3 July) and at least two large young still in the nest (4 July). In the North Carolina Sandhills, a flightless young found in Whispering Pines on 15 July (Philip and Thelma Vetter) provided a first nesting evidence for this region.

Also in the Sandhills, Jay Carter saw two at McCain on 18 June, one in Pinehurst on 15 July, and four at that town on 16 July. A pair also nested in Gay Duncan's yard at Southern Pines, fide Dorothy Foy. Farther to the north, Tom Howard saw individuals much of the summer at Falls Lake, including eight on 15 July; and Gail Whitehurst noted a pair at Raleigh on 15 June and 4 July. In the western piedmont, also outside the usual range, were two at Crowders Mountain, N.C., on 18 June (Paul Hart) and two also near York, S.C., on 22 June (Bill Hilton Jr.).

SOLITARY VIREO: A nest was found in southern Durham County, N.C., on 8 July by Grant McNichols.

BLUE-WINGED WARBLER: Out of range, though perhaps on territory, was one at Fairview in Buncombe County, N.C., from 15 May into July 1983 (Ruth Young).

CERULEAN WARBLER: Ron Warner observed a pair in June at Bat Cave Preserve in western Rutherford County, N.C. A moderate breeding population is present in this general area of the county.

PROTHONOTARY WARBLER: A notable range extension was made by Derek Carrigan, who reported a small colony, including singing males, on 8 June in Burke County, N.C. The birds were in flooded hardwoods where the Linville River enters Lake James. Rare for the Winston-Salem area was a singing male noted on 14 and 21 June at Tanglewood Park (Bobbie Page, Ramona Snavelly).

WORM-EATING WARBLER: An excellent count was 16 singing birds heard by Merrill Lynch and Harry LeGrand on 9 June in eastern Martin and western Washington Counties, N.C. Seemingly south of its range was one seen on 16 June at Bluff Plantation near Charleston by Perry Nugent and Charlie Walters.

SWAINSON'S WARBLER: At a previously known site, Joe Sox found a nest during the summer at South Mountains State Park, N.C. A good population is present in nearby Rutherford County, where Ron Warner noted four to six birds from 5 to 27 June. Another was heard singing at Clark's Park near Fayetteville in late June by Jarvis Hudson.

OVENBIRD: An apparent range extension was reported by Douglas McNair, who found a singing bird on 4 June near the airport in Horry County, S.C.

LOUISIANA WATERTHRUSH: Near the edge of the breeding range was one seen and heard singing on 10 May by Douglas McNair about 2 miles E of Ellore, S.C.

KENTUCKY WARBLER: Merrill and Karen Lynch and Harry LeGrand tallied 21 singing males on 11 June in the vicinity of the Roanoke River in southwestern Bertie County, N.C. Rick Knight noted two males at Glen Ayre, N.C., on 16 May at the moderately high elevation of 3000 feet.

SCARLET TANAGER: Evelyn Dabbs observed a singing individual in her yard near Mayesville, S.C., during June.

BLUE GROSBEAK: Very uncommon in Buncombe County, N.C., were a family group of four in Weaverville on 11 August, and another bird in late July at Fairview, as noted by Ruth and Jerry Young.

DICKCISSEL: A colony was discovered by Jack and Lula Stewart south of Cayce in Lexington County, S.C., where nesting pairs were seen in 1980. On 8 June they saw three singing males and two females, and breeding was confirmed on 27 July when a female and four juveniles were observed. Another colony was noted by Douglas McNair about 4 miles S of St. Matthews, S.C. He saw as many as six adult males and four females there between 9 May and 6 June. The birds were undoubtedly on their breeding grounds, but McNair was unable to visit the site on later dates to confirm breeding. No Dickcissels were reported during the summer (June or July) in North Carolina.

BACHMAN'S SPARROW: Harry LeGrand discovered a large breeding population in the lower piedmont, as evidenced by a count of eight singing males in southeastern Chatham County, N.C., on 30 June and six still singing on 1 August. The birds were in three extensive clear-cut

areas near Merry Oaks. Merrill Lynch noted another singing on territory in a clear-cut area in southwestern Halifax County, N.C., in mid-June. Also in clear-cut habitats, singing birds were noted by Charlie Wooten on Breeding Bird Survey routes in northern South Carolina: one on 9 June on a Lancaster-Kershaw County route, one on 17 June on a Lee-Kershaw County route, and two on 24 June on a Fairfield-Chester County route.

FIELD SPARROW: Very rare in summer in Carteret County, N.C., was one singing at Atlantic on 27 June (John Fussell). At a rather high elevation was a singing bird on Round Bald near Roan Mountain, N.C., on 20 May and 12 June at 5700 to 5800 feet (Rick Knight).

LARK SPARROW: This species bred during the summer at Nijmegen Drop Zone in Hoke County, N.C., in the western part of Fort Bragg. Jay Carter and others observed three on 16 April, three or four adults on 26 June, three adults and a juvenile on 5 July, and an adult and two juveniles on 10 July at a different place in the drop zone. Another adult was singing on territory at nearby Holland Drop Zone on 29 April (Carter, Julie Moore). No conclusive breeding evidence was reported in 1984 from the other known breeding locality in the state near Derby (Richmond County); however, Harry LeGrand did find a nonsinging adult in a field just northwest of Derby on 14 June. It seems likely that other territorial birds are present in the Sandhills region of both Carolinas, based on the records from four sites in North Carolina.

GRASSHOPPER SPARROW: Somewhat to the east of the known range were four singing sparrows at the Greenville, N.C., airport on 10 June (Harry LeGrand, Merrill Lynch). Rare in summer in the North Carolina Sandhills were one singing in extreme southeastern Montgomery County on 14 June (LeGrand), individuals at two sites near Derby on 28 May (Douglas McNair), and one near Fayetteville on 2 June (Jarvis Hudson, Doris Chambers). McNair also found four singing birds on 9 and 10 May in Calhoun County, S.C., along the edge of the breeding range.

WHITE-THROATED SPARROW: Perhaps the first record of this species on a breeding territory in the Carolinas was one singing on several dates from late June into July 1980 at Big Yellow Mountain, Avery County, N.C. Lance Peacock, Merrill Lynch, and Alan Weakley noted the sparrow in a shrub thicket near the edge of a pasture on the top of the mountain (5000+ feet).

BOBOLINK: A late female was seen by Douglas McNair near Conway, S.C., on 4 June.

HOUSE FINCH: A most unusual nest site was reported by Paul Hart at Gastonia, N.C. The nest was built in a hanging basket on the front porch of a home; adults were noted from 30 May into July. A pair nested in the yard of Mrs. C.J. Vaughn in Columbia, S.C., fide Jack Stewart. Apparently late migrants were males seen at Cape Lookout on 3 June by John Fussell and Henry Haberyan and at Shallotte, N.C., on 9 June by Ricky Davis.

RED CROSSBILL: Ron Warner saw 10 to 12 at Devil's Courthouse, N.C., along the Blue Ridge Parkway, on 16 June. A pair was also observed at Linville Falls, N.C., on 10 July by Duane Crane, John Crane, and Herb Holbrook.

PRODUCT REVIEW

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Buy a better bird feeder and squirrels will beat a path to your yard. However, the Presto Galaxy BF-14C greatly reduces the chances of their feasting on your sunflower seeds. The 14-inch clear plastic dome tilts under the weight of a squirrel, cutting off access to the food hopper that swings freely beneath it. After an unsuccessful raid, the squirrel usually slides to the ground unharmed. The dome also protects food in the hopper from precipitation and discourages entry of birds larger than Purple Finches. Feeding birds drop very few seeds from the hopper to the ground. The feeder is attractive, easy to assemble (excellent instructions, no tools needed), easy to refill, and easy to clean. It can hold any type of feed normally offered to birds. The BF-14S has a special tray for suet or peanut-butter paste in addition to the regular hopper for seeds. Tube-type feeders for sunflower and thistle seeds are also available with domes.

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If suspended from a limb or wire by a metal ring and a 12-inch steel fishing leader with swivels at both ends, and placed 3 feet or farther from any vertical post or tree trunk, the Presto Galaxy Squirrel Baffle Bird Feeder appears to come as close to being squirrel proof as one can be without keeping the birds out, too.—EFP



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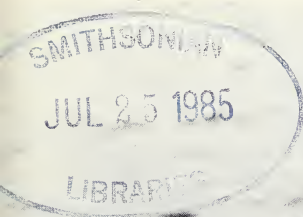
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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—Three Pomarine Jaegers caused quite a bit of excitement when they spent several days at a lake near Greensboro, N.C., in July 1984. They were photographed by H.T. Hendrickson and Donald F. Allen, who provide details of the occurrence in a field note beginning on page 41.

Breeding-season Records of the Henslow's Sparrow in the North Carolina Coastal Plain

J. MERRILL LYNCH and HARRY E. LeGRAND JR.

On 29 May 1983, while running a Breeding Bird Survey route in southeastern Martin County, N.C., Lynch heard two singing Henslow's Sparrows (*Ammodramus henslowii*) at a stop on the route. The birds were in a former pocosin that had been clear-cut and planted with Loblolly Pines (*Pinus taeda*), the pines being 2 to 8 feet in height. An abundance of grasses, sedges, and forbs were also present, along with scattered hardwood saplings. Further coverage of this site (Site 2 below) during 1983 yielded a total of four singing males. In addition, we found three singing males in 1983 at two sites (Sites 3 and 4) in northern Beaufort County, N.C.

During the summer of 1984, we searched for additional sites of Henslow's Sparrows in the North Carolina coastal plain, concentrating our search on extensive areas of cleared land in moist situations. We particularly keyed on pocosin lands that had recently been cleared of trees and had either been left fallow or had been planted in pine saplings. The observations below in 1983 and on 9 and 10 June 1984 were made by both authors, as well as by Karen Lynch (see Fig. 1). Observers of other records are cited.

LOCATION, POPULATION SIZE, AND HABITAT

Site 1—Martin County

Location: Southeastern Martin County, on SR 1538, 1.8 to 2.0 miles NE of the intersection with NC 171.

Population: Six singing birds on southeastern side of road on 9 June 1984, four in the southern part of this field and two in the northern part (at stop 5 on the Jamesville Breeding Bird Survey route); two singing in southern part on 23 June 1984 (LeGrand and Eloise Potter).

Habitat: A clear-cut pocosin (75+ acres); a young Loblolly Pine plantation, with pines now 2 to 8 feet high; dense ground cover of mixed grasses, sedges, and forbs, ranging from 1 to 5 feet high.

Site 2—Martin County

Location: Southeastern Martin County, on SR 1538, approximately 1.0 mile S of the intersection with SR 1545.

Population: Four singing birds in 1983, from 29 May to late June; two singing birds in 1984, on 9 June.

Habitat: Same as at Site 1 (75+ acres).

Site 3—Beaufort County

Location: Junction of Barber 1 Road and Shady Lane (private roads of a timber company) in extreme northern Beaufort County.

Population: Two singing birds noted on 2 June 1983.

Habitat: Similar to Sites 1 and 2 (50 acres), but with pines shorter in height, no more than 5 feet tall.

Site 4—Beaufort County

Location: Junction of Shady Lane and Corey Road (private roads) in extreme northern Beaufort County.

Population: One singing bird noted on 2 June 1983.

Habitat: Clear-cut pocosin (20 acres); Cane (*Arundinaria gigantea*) 1.5 to 4+ feet high the predominant vegetation, in addition to various grasses and forbs; only a few scattered hardwood saplings and shrubs, but essentially no pines present.

Site 5—Beaufort County

Location: Junction of J & W Tram Road and Baker Road (private roads) in north-central Beaufort County, about 6 air miles NE of Washington. Sites 1 through 5 are in Hall Swamp pocosin, where Lynch (1982) did not find Henslow's Sparrows in April and May 1981.

Population: Four singing birds on 9 June 1984.

Habitat: Clear-cut pocosin (50+ acres); similar to Sites 1 through 3, but with more hardwood saplings among the pine saplings.

Site 6—Beaufort County

Location: Voice of America site A; extreme northwestern Beaufort County on the northeastern side of the intersection of SR 1001 and SR 1414 at Leggetts Crossroads.

Population: Eight singing birds on 9 June 1984; 20 singing birds on 23 June 1984 (LeGrand and Potter).

Habitat: Cleared pocosin maintained in an early successional stage by mowing, or possibly by burning (3000+ acres); grasses, sedges, forbs, and low saplings of various densities, generally less than 3 feet high; very few pines. Yellow Pitcher Plants (*Sarracenia flava*) are common in certain wet spots in this extensive cleared area (2.0 by 2.3 miles).

Site 7—Beaufort County

Location: Along SR 1414, approximately 2.5 miles SE of Leggetts Crossroads in extreme northwestern Beaufort County.

Population: One singing bird on 23 June 1984 (LeGrand and Potter).

Habitat: A clear-cut area, possibly a former pocosin, planted in Loblolly Pine saplings mainly 6 to 12 feet high; typical cover of herbaceous plants among the pines. This site was the most "heavily wooded" of those described here.

Site 8—Pitt County

Location: Voice of America site C; central Pitt County on the eastern side of SR 1212, about 6 air miles due W of Greenville.

Population: Two singing birds on 10 June 1984; four singing birds on 23 June 1984 (LeGrand and Potter).

Habitat: Cleared land, but perhaps not a former pocosin (600+ acres); somewhat drier than other sites; closely mowed field of dense grasses and forbs 0.5 to 1.0 foot high with a few scattered Red Maple (*Acer rubrum*) saplings up to 2 feet tall. Other sections of this cleared area (1.25 by 0.75 miles) contain taller shrubs and saplings (2 to 3 feet high), but no Henslow's Sparrows were found there.

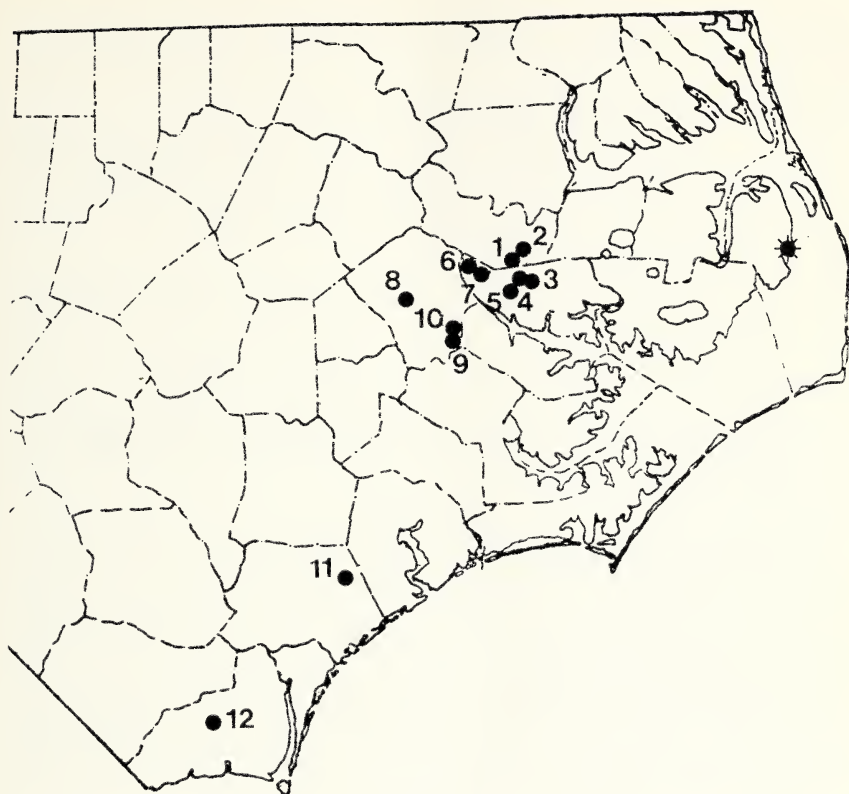


Fig. 1. Breeding-season distribution of the Henslow's Sparrow in eastern North Carolina. The numbered dots refer to sites where the authors found singing Henslow's Sparrows. The starred dot is the location of Burleigh's sighting in 1934 (see text).

Site 9—Pitt County

Location: Voice of America site B; extreme southeastern Pitt County; E of SR 1785, approximately 5 air miles NE of Shelmerdine.

Population: Six singing birds on 10 June 1984.

Habitat: Essentially identical to Site 6, but slightly drier (2000+ acres; 2.0 by 1.5 miles); clearing maintained by mowing, or possibly by burning.

Site 10—Pitt County

Location: Along a timber company road 0.5 mile N of Voice of America site B, in extreme southeastern Pitt County.

Population: One singing bird on 10 June 1984.

Habitat: Similar to Sites 1 through 3 (20 acres); a clear-cut pocosin with Loblolly Pine saplings planted in rows; saplings 4 to 6 feet tall over dense grasses and forbs.

Site 11—Pender County

Location: Northeastern Pender County, just off SR 1532, about 3 miles SE of Maple Hill.

Population: Four singing birds on 18 August 1984 (LeGrand).

Habitat: Longleaf Pine (*P. palustris*) savannah (100+ acres), which is intentionally burned by the owners every few years to maintain the rather open nature of the habitat for wildflower diversity; pines mostly under 25 feet high and scattered through the habitat; pocosin adjacent to savannah on all sides.

Site 12—Brunswick County

Location: East side of NC 211 in Green Swamp, about 8.5 air miles N of Supply, in Brunswick County.

Population: Four singing birds on 3 June 1984 (LeGrand); two singing on 28 July 1984 (LeGrand and Ricky Davis).

Habitat: Clear-cut pocosin of well over 2000 acres; similar in appearance to Sites 1 through 3, being planted in rows of Loblolly Pine saplings now 4 to 8 feet high, with a thick cover of herbaceous plants.

BEHAVIOR

All of the birds tallied on our survey were singing individuals, presumably on territory. No other evidence of breeding, such as the carrying of food, was observed, though we have little doubt that the birds were nesting. Essentially all of our survey was conducted from roads at the edges of these sites. We spent virtually no time within the fields searching for nests or fledglings because our aim was to census as many areas of suitable habitat as possible to determine the extent of the range of the species. Henslow's Sparrows were noted singing from dawn to early afternoon (the period of our survey), even on days when temperatures approached 90°F. This species is noted for its nocturnal singing (see Graber 1968), but we were not present at suitable habitat before dawn.

Unlike the closely related Grasshopper Sparrow (*A. savannarum*), which often sings from exposed perches such as fences, we never saw a Henslow's sing from a fence or an exposed snag in the fields. Several birds did sing from the tops of pine and deciduous saplings, and a bird at Site 11 sang from a bare pine branch 15 feet above ground; but such singing was not common. Rather, most birds that we saw singing were perched either in the middle of a sapling or clinging to the stalk of a herbaceous plant. In fact, we were unable to see more than two-thirds of the Henslow's Sparrows heard singing, despite the "openness" of the habitats.

Henslow's Sparrows are notoriously gregarious in their breeding behavior. Whether the birds we noted formed loose colonies in these fields is debatable. It is true that most fields contained several birds, but the birds seemed to be dispersed somewhat randomly, or perhaps even uniformly, in these fields.

There were relatively few other bird species noted in the same habitats with the Henslow's Sparrows. Eastern Meadowlarks (*Sturnella magna*) were the primary associate, being found at essentially all of the 12 sites. Common Yellowthroats (*Geothlypis trichas*) were present at most sites, and Field Sparrows (*Spizella pusilla*) were noted at half of the sites. Lesser associates were Red-winged Blackbird (*Agelaius phoeniceus*), Prairie Warbler (*Dendroica discolor*), Indigo Bunting (*Passerina cyanea*), and Yellow-breasted Chat (*Icteria virens*).

HABITAT — OVERVIEW

All of the Henslow's Sparrow sites located during our survey are in heavily disturbed, early successional habitats except for the population in a fire-maintained Longleaf Pine savannah (Site 11). With the exception of Site 11, the structure and composition of the vegetation communities are similar.

The eleven sites containing disturbed habitats are all in an early successional stage as a result of clear-cutting. Each site is composed of a dense ground cover of various species of grasses, sedges, herbs, and ferns, with scattered shrubs and saplings 2 to 8 feet in height. Excluding the Voice of America sites, the disturbed sites are within commercial timber areas where preparations have been completed for managed Loblolly Pine plantations. At each of these commercial plantations, the pines are 1 to 4 years old and have not yet overtopped and shaded out the dense ground-cover vegetation. At the Voice of America sites, the dense ground cover is maintained in a permanent early successional stage by mowing, burning, or using both means.

The most frequent and dominant herbs and grasses at these sites include Dog Fennel (*Eupatorium capillifolium*), Cane, and broomsedges (*Andropogon* sp.). Most sites also contain a number of typical pocosin plants such as Virginia Chain Fern (*Woodwardia virginica*), Bracken Fern (*Pteridium aquilinum*), Colicroot (*Aletris farinosa*), various sundews (*Drosera* sp.), Crow Poison (*Zigadenus densus*), and Yellow Pitcher Plant. In addition to Loblolly Pine, the most common shrubs and saplings are Sweet Bay (*Magnolia virginiana*) and Red Maple.

The soils underlying the sites are generally fine sandy or silty loams that are poorly drained and have a seasonal high water table at or near the surface. Soils include the Rains, Lynchburg, Coxville, Nahunta, Byars, and Leaf series (U.S. Soil Conservation Service 1974).

DISCUSSION

The discovery of presumably breeding Henslow's Sparrows in the North Carolina coastal plain is notable on several accounts. First, the species had not been reported breeding in the state in several decades, and there had been no records suggesting nesting since summer reports in Ashe County in 1959 and 1960 (Hurt 1959, 1960). Second, nearly all summer records for North Carolina were for the piedmont (Pearson et al. 1959, Potter et al. 1980), with the only breeding-season record for the coastal plain being one bird heard singing by Thomas Burleigh at Stumpy Point, Dare County, on 20 July 1934 "from the edge of a wide stretch of open and slightly marshy meadow" (Burleigh 1937). Third, this is the first published account of the species summering and presumably breeding within its winter range, except for a disjunct breeding population at Houston, Texas (Webster 1974). Fourth, the habitats involved—mostly various types of clear-cut pocosins—have apparently not been previously reported for the species during the breeding season. Henslow's Sparrows typically breed in "weedy prairies and meadows, and neglected grassy fields and pasturelands, which are often dotted with low shrubs or bushes" (Graber 1968, p. 779). The species prefers wet situations, and it also breeds in marsh borders (see Hamel et al. 1982). Thus, the habitats reported in this paper generally contain the key features usually present in typical breeding habitat—thick herbaceous cover, a scattering of shrubs or saplings, and a moist setting.

Henslow's Sparrows breed primarily in the north-central and northeastern United States, south to Virginia. Though occasional Henslow's appear in Virginia in summer over much of the state, nearly all breeding birds are restricted to the northern coast at Saxis and the extreme northern piedmont in Loudoun County (Larner 1979), at the Dulles Airport. The Henslow's Sparrows in Martin, Pitt, and Beaufort Counties are approximately 150 miles south of the nearest known breeding sites in northern Virginia. The "outpost" in Brunswick County extends the summer range southward another 90 miles. Elevations of the newly discovered locations range from 25 feet above sea level in Pender County (Site 11) to 85 feet at Site 6 in Pitt County, with most sites being 40 to 50 feet above sea level.

It is interesting to note that we found no Grasshopper Sparrows at any of the 12 sites. Grasshopper Sparrows are known to breed locally throughout much of the North Carolina coastal plain, particularly at sites where grassy fields are maintained. Airports and extensive, minimally grazed pastures seem to be preferred sites. In fact, on 10 June 1984 we found a colony of Grasshopper Sparrows at the Pitt County-Greenville Airport, only 5 air miles NE of a Henslow's Sparrow colony (Site 8). Although habitat at the two sites appeared similar, tall forbs and shrubs dominated Site 8 whereas various grasses were the dominant vegetation at the airport. The soils at the Grasshopper Sparrow colony were much sandier and better drained than the soils underlying the Henslow's Sparrow sites.

North Carolina's pocosins have been disappearing at an alarming rate, owing generally to clearing of vegetation, mainly by timber companies for pine plantations and by large-scale agricultural operations. Though the destruction of pocosin habitats has been detrimental to most pocosin species, particularly forest birds (Lynch 1982), it has been favorable to the Henslow's Sparrow and other early successional species. However, the rapid growth of the pine saplings that are planted in most of the clear-cuts limits the suitable habitat for the birds to just several years, as these sparrows presumably abandon the fields when the pines begin to reach 8 or 10 feet in height. Thus, most of the sites listed here will be unsuitable for Henslow's in a few years, though undoubtedly other sites will become available each year as the pine plantations are harvested and replanted in rotation. It is fortunate that Henslow's Sparrows are present on the three Voice of America sites, because these antenna fields are likely to be kept in suitable grass-shrub habitat by regular mowing.

Undoubtedly, the breeding range of the Henslow's Sparrow is much more widespread in the North Carolina coastal plain than reported here. Except for portions of southern Washington County, we have not searched for the species in counties other than the ones listed above. Large areas of disturbed pocosins lie to the east of the sites reported here, and it is very likely that suitable habitat exists in counties such as Hyde and Dare. We hope that other observers will search for Henslow's Sparrows in locations and habitats such as those described in this paper and that further evidence of breeding will be forthcoming.

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CORRECTIONS

In the spring 1984 issue of *The Chat*, the authors of "The genus *Sula* in the Carolinas: An Overview of the Phenology and Distribution of Gannets and Boobies in the South Atlantic Bight" inadvertently omitted two acknowledgments. William Post of The Charleston Museum reviewed a field note by J. Christopher Haney that was later combined with a manuscript written by David S. Lee, senior author of the joint paper (*Chat* 48:29-45). Dr. Post sent Haney's Masked Booby photograph to George E. Watson, of the National Museum of Natural History, who kindly confirmed the identity of the bird.

In the Winter 1985 issue, there are several errors that are in no way the fault of the authors. The caption at the top of page 5 should have read "TABLE 1, Continued." On page 9, the continental maps are correctly placed, but three of the four state maps are in the wrong places. The state map in Figure 3 (Northern Saw-whet Owl) is that of the Black-capped Chickadee (note open circles for former breeding range). The state map in Figure 4 (Black-capped Chickadee) is that of the Hermit Thrush (three nesting sites known in North Carolina). The state map in Figure 5 (Hermit Thrush) is that of the Northern Saw-whet Owl.

Backyard Birding

... with Gail T. Whitehurst

We Created a Monster

This Backyard Birder has moved to Asheville, N.C., back to the hometown our family left more than 20 years ago. Husband Carl and I have been so busy getting settled and re-acquainted with old friends and places that there has been precious little time for birding. It is early January as I write this, and we have just gotten some feeders up. We have to heed the advice often given to others putting up feeders for the first time—be patient! It may be February before the first chickadee finds the seeds and leads others to them. We have seen, in our brief forays outside, that there are plenty of the winter flocks consisting of chickadees, titmice, nuthatches, and woodpeckers around. Have also noted a small flock of Yellow-rumped Warblers and some House Finches. We were aware that the finches had been seen in the mountain area, but did not know the extent of their movements. The big surprise, and a delightful one so far, has been seeing a couple of tiny Brown-headed Nuthatches occasionally. We feared we had left them behind in Raleigh. We had read in *Chat* last year that some had been sighted on the campus of UNC-A, which is not too far distant.

From time to time, I have made reference in this department to the extensive feeding program carried on in our Raleigh backyard. Perhaps now is the time to elaborate on this program—how it came about and the advantages and disadvantages.

Back in the late sixties, we began a feeding program that grew and grew until it became a time-consuming, expensive, and burdensome “monster.” We were really shocked a few years back, when answering a questionnaire, to discover that over a year we were feeding several hundred individual birds. The cost of this for seeds, peanut butter, cornmeal, and peanuts was astounding.

It all began innocently enough. In addition to the regular hanging seed feeders and a chunk of suet or two, we enticed a pair of Rufous-sided Towhees to come close for handouts; bread crumbs and sunflower seeds. It was summer, during the nesting season. The male towhee was most eager to find food for his young and became quite bold and fearless, hopping within a few feet to pick up the offerings. A nesting Brown Thrasher, foraging along the same hedgerows, caught on to what was happening. He, and later, his mate, began to slip out and grab a bit of extra food, too. A pair of Gray Catbirds joined the small group by late summer. The following spring, these same birds returned for help in feeding their nestlings. The young, when on their own, saw where the parent birds were getting extra goodies. Before long they, too, were coming for handouts. Somewhere

along the line, we began mixing cornmeal and peanut butter, oftentimes adding bacon drippings or melted suet and expanding and softening the whole by addition of boiling water. We made this mixture into cakes and from these cakes, pinched off bite-sized bits to toss on the ground. This food the birds liked so well, that they no longer would take bread. As time went by, the birds accepted me along with the food, permitting me to come quite close. Every time I went outside, I would hear one or another calling to me, begging, nay, even *demanding* food! I recall one hot summer when the pair of towhees would hop up onto the back porch and call "joreet" loudly until I came with the food.

The real growth of our monster began in the summer of 1972. It was in early August of that year that we found and raised a baby American Robin. When he was being fed strained baby meat, with a medicine dropper, the other birds gathered around and watched. Somehow, the total fearlessness of the baby bird reassured them that we were harmless. Many of the adults were feeding young; so whenever we went out to feed the robin, here came a towhee hopping towards us. Or a thrasher would run out from under a hedge. It did not take long after that for those bright-eyed seers of everything that goes on, the Blue Jays, to take advantage of the "freebies." We found that the young birds were less fearful and more willing to try something new. Soon, even Northern Cardinals joined the society of free-loaders. By fall, the robin departed (to return the following spring). We began making up more food at a time and began feeding these "tame" birds on a year-round basis. To our surprise, we began to find White-throated Sparrows and a Northern Mockingbird joining the throng. By the following winter, Dark-eyed Juncos came into the fold. And from then on the monster really began to grow. Here came grackles, starlings and House Sparrows. It became impossible to shoo away the unwanted birds, and we just had to accept them along with the rest.

When our "baby" robin returned in the spring, he somehow communicated to his mate that our food was good for feeding nestlings. We had robins from then on, long after the original one was gone. There was a period of 3 years when we had a male Wood Thrush come for the mixture during the time he was feeding young. Also, we had a male Summer Tanager for several summers. When he found it difficult to compete with birds on the ground, I would toss a piece of food up in the air so he could catch it on the wing. When the towhees would come for help in feeding their cowbird young, they would bring the fledglings. The latter quickly discovered the food and were the tamest of all. There were winters when we had a lovely male Pine Warbler joining the group, and occasionally a chickadee or Carolina Wren. I began putting some of the food on tree trunks for woodpeckers. Soon a gorgeous male Red-bellied Woodpecker began partaking. He would call to me for food from a perch. As soon as I put his food in the side of the tree, he would fly to the tree and back down to the food. He would eat it there, or take a beakful back to the nest. When his young were fledged, he brought them to the tree. Thus began a succession of woodpeckers expecting to be fed. Of course, other birds found this food on tree trunks, too—warblers, kinglets, creepers, and nuthatches.

As the monster continued to grow, it occurred to me that our feeding program was causing an unnatural situation. Birds that normally had their own feeding niches to fill began to be in competition with other species. Individuals within a species became highly competitive and aggressive. Territorial disputes became exaggerated, considerably. We see this at feeders in winter, but here we had nesting birds coming from all directions wanting our food. Woe unto the bird caught crossing into another's territory. We found

ourselves putting out food in every corner of the yard, front and back, and even across the street in the woods in order to cut down on the hassles. We almost dreaded the first trip out in the morning when the throng descended on us en masse. It was better on days when we were working outside. We would carry some food in a pocket and feed whatever bird managed to get our attention without drawing a crowd. Some of these birds were always willing to take the earthworms, grubs, and cutworms we might dig up. Others would take only the special food. We were never able to entice the Purple or House Finches, or Evening Grosbeaks to try this food. They were content to gobble up the sunflower seeds.

In addition to feeding the birds our special food, we always scattered mixed grains in the front driveway and a couple of bare spots in the backyard. This attracted doves as well as the many white-throats and juncos. We had a time pattern, which the birds knew. At first light in the morning came the eaters of scattered seed. In winter, especially when weather was bad, we placed extra rations out in early afternoon. Looking out a window, it was interesting to note that the birds began to gather in trees and shrubbery in anticipation of the feeding time. The first flake of snow, or just before the leading edge of a cold front, brought a rush of birds expecting to find food.

We did enjoy having wild birds approach us whenever we went out of doors. It gave us an opportunity to keep up with migration patterns of various species arriving and leaving as the seasons changed. Because the birds were unafraid, we were able to watch them close at hand and study their behavior. We had opportunities to observe the many stages of growth and development from fledgling to adult. We came to know individuals by their markings and personality traits. In fact, we made our backyard a kind of laboratory. Many of the observations we have reported from time to time would not have been possible had we not established this monster feeding program. In spring, we would know when various broods had hatched by noting that the parent birds began taking food away rather than eating it on the spot. We had, over the years, first-hand looks at sick or injured birds. They tended to become less fearful and would come quite close in order to get something to eat, not having to hassle the other birds.

But, every spring, after the monster became so large, I vowed to cease this feeding program. It was taking up far too much of my time, and there was little pleasure in going out in the worst winter weather to toss out bits and pieces. But always there was one special bird I couldn't resist, and so we kept it up, year after year. We did slack off during the summer and early fall months, but come winter, there we were, back at it again.

When we decided to move to Asheville this past fall, I knew I had to stop feeding these birds. Fortunately, with all the packing that had to be done, I was not outside much, and could ignore the birds. It was not easy, mind you, but necessary. There are many feeders in the neighborhood, and perhaps this winter the folks are doing a land-office business. Some used to complain that we always got "all the good birds." We could not help wondering if the Fox Sparrow came back this winter, and finding no food, went on to a more suitable habitat.

Of course, getting out from under the burden of the feeding program was not the reason for our move. However, it has been good to have a breather and to devote more time to other duties. We have vowed never again to get into such a feeding program. We

(Continued on Page 48)



Roundtable

... with Louis C. Fink

1984, a Good Year for Bluebirds

In 1982 I offered a note in *Chat* (46:109-110) on the question of whether or not Eastern Bluebirds are single-brooded; that is to say, cease attempting to nest after one success. That particular year each of the seven pairs under my scrutiny fledged a single brood with no attempts at renesting. Some pairs fledged a brood early in the season and seemingly quit for the year, whereas others succeeded on the second attempt and ceased nesting.

The 1983 season was a very poor one for bluebirds at Raleigh. There were only two broods fledged from my seven houses, several broods dying in the nest, presumably from the severe heat experienced that year. Nevertheless, there was no shortage of nesting pairs in the area in 1984, and those fared very well, as the following data show:

<i>House number</i>	<i>Nesting attempts</i>	<i>Successful broods</i>	<i>Young fledged</i>
1	2	0	0
2	2	1	4
3	1	1	4
4	2	2	7
5	3	3	12
6	2	2	6
7	3	2	7
Totals	15	11	40

There was a full clutch of 5 eggs in House 3 by 1 April. Four young were fledged, and there were no further attempts at nesting, although a pair of adults and some juveniles remained in the area throughout the summer. House 5 might have been used by more than one pair, but I doubt that. My experience has been that a pair, if both members survive, guards a territory throughout the summer whether they renest or not. House 6 afforded good evidence for double-broodedness for the resident pair. The first brood of three fledged in May, remained in the territory, and helped feed the second brood. The first brood apparently dispersed after the second brood of three had fledged. The parents and the second brood remained until 25 August and then dispersed.

Thus there is good evidence that the pair using House 3 was single-brooded, that the pair in House 6 was double-brooded. The pair in House 5 appears to have been triple-

brooded. My observations do not prove the point, of course, but do suggest that Eastern Bluebird pairs are variable in their reproductive investments, both within, and among, seasons. The problem offers an opportunity for more precise research.—JOSHUA A. LEE, 5104 Newcastle Road, Raleigh, N.C. 27606

BRIEFS FOR THE FILES

(Continued from Page 53)

WORM-EATING WARBLER: Quite unusual was one singing at Clark's Park near Fayetteville on 13 October (Philip Crutchfield, Jim Sipiora).

LOUISIANA WATERTHRUSH: This species is rare in the Carolinas after August; thus, one seen by Ricky Davis at Jordan Lake on 16 September was late.

CONNECTICUT WARBLER: Heavy coastal flights occurred on the nights of 26-27 and 27-28 September, under cloudy skies and northerly winds during the offshore passage of Tropical Storm Isadore. Allen Bryan and Ricky Davis had three live and five tower-killed birds—the most common species in the kill—at Buxton, N.C., during the period. Will Post picked up a dead Connecticut at a TV tower at Mount Pleasant on 28 September. The only inland sighting was an adult male near Pineville on 6 October (David Wright et al.).

WILSON'S WARBLER: One rather late warbler was collected at Mount Pleasant on 18 October by Will Post.

CANADA WARBLER: Quite rare on the coast in fall were individuals banded by Will Post at Mount Pleasant on 30 August and 10 September.

DICKCISSEL: Will Post collected one for the Charleston Museum on 30 September at Mount Pleasant, and one was seen near York on 24 November by Bill Hilton Jr. and Kevin Craig.

CLAY-COLORED SPARROW: A netted bird at Mount Pleasant was collected on 7 October by Will Post. Very rare inland was another observed on 5 November near Townville by Charlie Wooten; it was still present on 2 December, when seen by Wooten and Sidney Gauthreaux.

LARK SPARROW: In addition to a fall record from the North Carolina Outer Banks, where regular, individuals were reported in South Carolina by John Hatcher in his yard at Aiken on 2 October and at an impoundment near Savannah, Georgia, on 4 October by Chris Haney.

LINCOLN'S SPARROW: North Carolina birds were noted near Ringwood in Halifax County on 4 October (Merrill and Karen Lynch), Charlotte on 10 and 11 October (David Wright), Raleigh on 13 October (Harry LeGrand), Hendersonville on 15 October (Ron Warner), Cornelius on 18 October (Wright), Fairview on 21 and 27 October (Ruth Young), and Pungo refuge on 17 November (Allen Bryan). In South Carolina, Will Post netted sparrows at Mount Pleasant and Sullivans Island on five dates from 3 October to 6 November; another was near Townville on 11 November (Sidney Gauthreaux, Charlie Wooten).

LAPLAND LONGSPUR: One was rather early at Pea Island on 12 October, as seen by James and Elizabeth Pullman, and Douglas McNair had an excellent count of 17 at the Laurinburg-Maxton Airfield, N.C., on 27 November.

YELLOW-HEADED BLACKBIRD: Likely a record count for the Carolinas was a group of four females and one male, all immatures, seen foraging along the edge of a tidal pool at Cape Hatteras point on 3 September by Bruce Peterjohn and Larry Rosche. One was seen by Graham Dugas at Hilton Head Island, S.C., on 28 October.

RED CROSSBILL: One was seen by Ricky Davis at Beaverdam Reservoir on 7 October.

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

First Inland Record of Pomarine Jaeger from the Carolinas

H.T. HENDRICKSON

Department of Biology
University of North Carolina at Greensboro
Greensboro, N.C. 27412

DONALD F. ALLEN

Department of Sociology
University of North Carolina at Greensboro
Greensboro, N.C. 27412

Potter, Parnell, and Teulings in *Birds of the Carolinas* (Univ. N.C. Press, 1980) said that jaegers (genus *Stercorarius*) are "birds of the ocean and rarely come ashore except at their Arctic or Antarctic breeding grounds." Their summarization of the occurrence of the Pomarine Jaeger (*Stercorarius pomarinus*) in the Carolinas is that it "probably occurs off the Carolina coast throughout the year except for a brief absence at midsummer. Although it is generally uncommon, the species is seen regularly in fall and early winter from the shore along the Outer Banks and occasionally elsewhere along the coast." A review of back issues of *The Chat* from 1968 to the present suggests that the species can now be found regularly in the spring as well. We have been able to find only three summer records of this species: a dark-phase bird found at Shackleford Banks on 7 July 1981 (*Chat* 45:22); one seen off Oregon Inlet on 8 July 1982 (*Chat* 46:23); and one found on land at Morehead City on 5 June 1983 (*Chat* 48:22). None of the reports found can be considered inland sightings.

On 13 July 1984 we discovered three Pomarine Jaegers feeding on a dead Common Carp (*Cyprinus carpio*) approximately 75 yards from the boat launching area at Lake Townsend near Greensboro, Guilford County, N.C. One of the birds appeared to be a subadult in that its blunt-tipped central rectrices extended only about 1 inch beyond the rest of the tail. The other two birds clearly appeared to be adults with the central rectrices extending approximately 4 inches beyond the tail and twisted into the vertical plane, and with the white of the neck heavily suffused with straw yellow. All birds were in the light color phase. Observations through 7X binoculars were sufficient to identify the birds as jaegers; specific identifications were made using a 25X Balscope.

On 15 July, we rented a boat from the marina to get into the middle of the lake where we obtained photographic evidence of the sighting. This photo (see front cover) shows one of the three birds. (Note the band on the left leg.) We never managed to get

more than two birds in any one photograph. Numerous other people saw and photographed the birds as well. On 27 July a story and color photograph of one of the birds appeared in the local newspaper (Greensboro News & Record 94(209):1). The birds were seen daily through 6 August.

On several occasions the jaegers were seen feeding on dead Gizzard Shad (*Dorosoma cepedianum*) as well as carp. Although a small number of gulls and terns appeared on the lake during late July, we saw no instances of the kind of piratic chasing for which jaegers are famous. On 27 July, one of the apparently adult birds made one swoop at a flying Great Egret (*Casmerodius albus*) with no further efforts at harassment. On 1 August, Hendrickson observed one of the jaegers being attacked by a tern in much the same way that swallows attack buteonine hawks.

The appearance of the band on the left leg of at least one of the birds prompted a telephone call to the Bird Banding Laboratory at Pautuxent, Maryland. George Jonkel told Hendrickson that the last Pomarine Jaeger receiving a USF&WS band, for which they have a record, was one bird banded in 1975 in the Northwest Territories of Canada. However, the Greensboro bird may have been banded in Europe or Asia, as nonbreeding jaegers are notorious wanderers. Pomarine Jaegers normally do not return to their birthplace until they are 2 to 4 years old and may not breed for the first time until even older.

First South Carolina Specimen of the Iceland Gull

WILLIAM POST and CARROLL G. BELSER

The Charleston Museum

360 Meeting Street

Charleston, S.C. 29403

On 14 January 1985 we secured an Iceland Gull (*Larus glaucooides*) in Charleston Harbor on Crab Bank, a spoil island about 0.5 km S of the outlet of Shem Creek, Mount Pleasant, Charleston County, S.C. This individual (ChM 1985.7.5) is a female in first-winter plumage.

The bird's weight was 837 g; chord of wing, 377 mm; total length, 509 mm; culmen from base, 41.4 mm; tail, 149 mm; tarsus, 56 mm. Distal bill color was drab (color 27 of Smithe 1974), shading to sepia (color 119, Smithe 1981) proximally. The legs were vinaceous pink (color 221c, Smithe 1981). The irides were dark brown.

We first saw this bird on 14 December 1984 as it flew over the mouth of Shem Creek. When we again found the bird on 14 January, it was resting on a sand beach about 1 m from the water. It was associating with about 15 Ring-billed Gulls (*L. delawarensis*). On one occasion it supplanted a Ring-billed Gull.

We were about 25 m from the bird when we collected it. At this distance we were able to identify it as an Iceland Gull before collecting. Salient characteristics were: small size (intermediate between Ring-billed Gull and Herring Gull, *L. argentatus*), all-white plumage, short and narrow all-dark bill. The closed wings of this specimen extend beyond the tail, although we did not use this as a field characteristic. When we saw the bird fly over our boat on 14 December, the main features noted were: all-dark bill and lack of dark wing and tail markings.

The status of the Iceland Gull in the Carolinas has been controversial (LeGrand 1977). No individuals had previously been collected in either state, although at least two have been taken in Georgia (see below). Iceland Gulls are easily confused with Glaucous Gulls (*L. hyperboreus*). The problems of field separation of local "white-winged" gulls have been discussed by Fussell et al. (1982). We agree with these authors and LeGrand (1977) that bill shape and color and head shape are the best field characteristics for separating *L. glaucoides* and *L. hyperboreus*. For hand-held birds (in addition to the above characteristics) the two species are best separated by measurements such as culmen and tarsus length, which do not overlap between these species. For example, culmen length for 28 female *L. glaucoides* ranged from 39.1 mm to 48.2 mm, whereas the comparable range for 31 female *L. hyperboreus* was 53.4 mm to 64.0 mm (Cramp et al. 1983).

In our opinion there are only four reliable sight records (viz. published accounts with adequate details, made by experienced field workers) of Iceland Gulls in South Carolina: Mount Pleasant, 7 January 1964 (Chamberlain 1964); Clemson, 3 to 8 February 1976 (LeGrand 1978); Charleston, 15 February 1976 (Forsythe 1978); Mount Pleasant, 3 April 1977, (LeGrand and Gauthreaux 1978). Combined with our sight record, these document a season of occurrence from mid-December through early April.

Two specimens of the Iceland Gull have been taken in Georgia. The first state specimen was shot by I.R. Tomkins on 14 February 1935 at Savannah. This specimen (I. Tomkins 523, ChM 1935.63) was originally identified as a Glaucous Gull, and the misidentification was published (Tomkins 1941, Tomkins 1958, Greene et al. 1945, Burleigh 1958). The other Iceland Gull specimen for Georgia is also in the Charleston Museum (I. Tomkins 665, ChM 1942.56.4), collected 13 February 1941, 5 km E of Savannah, also by Tomkins (1941). Until now, this has been considered to be the first Georgia specimen (Tomkins 1941, 1958; Greene et al. 1945; Burleigh 1958). Because of the above reidentification, it is now the second Georgia specimen. In addition, Tomkins collected three other "Glaucous Gulls" (Tomkins 1931, 1941, 1958; Burleigh 1958) which may also be misidentified. These specimens are not in any of the known repositories of Tomkins's collection: The Charleston Museum, Savannah Science Museum, University of Georgia, Mercer University (Coolidge 1965). Details of this imbroglio are being published elsewhere (Post, in press).

The problems that museum workers have had in identifying Iceland and Glaucous Gull specimens further emphasize the difficulties that field workers will have in making positive field identifications. They also underline the importance of having well-documented voucher specimens as the ultimate reference for species' occurrences.

Acknowledgments. We appreciate comments made by H.E. LeGrand Jr., D.S. Lee, and D.M. Forsythe. The manuscript was typed by Nancy Pringle, and Beverly Ammons prepared the Iceland Gull skin.

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A Record of Thayer's Gull from Hatteras Inlet, Dare County, N.C.

MICHAEL H. TOVE
Department of Biology
Utah State University
Logan, Utah 84322

On 27 December 1983 at approximately 1630, I observed a first-winter Thayer's Gull (*Larus thayeri*) at the north end of Ocracoke Island, at Hatteras Inlet, Hyde County, N.C. The bird was first noticed as it flew in and landed among a large group of gulls 65 m away. Bob Lewis, who was scoping gulls nearby, confirmed the identification. The bird was studied at leisure for several minutes and in direct comparison to similar-aged Herring Gulls (*L. argentatus*). It was paler tan-brown and much more uniformly colored overall. The back and wing coverts had a marbled rather than blotchy pattern; overall the bird was less contrasty than any Herring Gull present (about 150,000; roughly half immatures). The folded primaries were unique, tan-brown in color and only slightly darker than the back. Each feather was boldly outlined with buff-white margins, including a mottled invasion of white onto the brown centers. The Thayer's Gull was slightly smaller than any Herring Gull nearby. The bill was as long as that of a Herring Gull but more uniform in thickness and with a gentler curvature at the tip. The color of the bill was mostly blackish with a dusky grayish-pink base.

Eventually I flushed the bird. In flight from above, the primaries were paler than the mantle except for the outer two or three, which were slightly darker, and the next four or

five, which had darkish tips. The only notable contrast in plumage was the dark brown tail. From below, all the flight feathers were distinctly white, contrasting notably with the tan under-wing coverts.

Two gull species pose potential identification problems and hence warrant discussion. Immature Herring Gulls are darker and generally show a great deal of contrasting dark and light blotches in the upper-wing coverts and back. The primaries and secondaries are blackish above and grayish below. The folded wing either lacks white in the tips or has white margins at the tips of each primary. Conversely, Thayer's Gulls generally show a whitish border that encircles and outlines each primary (Lehman 1980). In flight, the contrast of blackish flight feathers and lighter wing coverts in Herring Gulls differs markedly from the low-contrast pattern in Thayer's Gulls. Moreover, Herring Gulls are not white-winged from below. The tail band of a Herring Gull is dark and strongly contrasts with the paler rump but is not darker than the flight feathers. In Thayer's Gull the tail band is distinctly darker than any other part of the bird (Lehman 1980).

Immature Iceland Gulls (*L. glaucoides*) have posed identification problems (see Fussell et al. 1982) but usually in the form of Thayer's Gull misidentified as Iceland Gull (e.g. Amer. Birds 32:1030, 33:296). Iceland Gulls are usually much paler. However, the darkest Iceland Gulls and palest Thayer's Gulls may be similar. In such cases, Iceland Gulls are distinguishable by virtue of whitish primaries (but see Gosselin and David 1975), smaller size (especially the bill), and lack of a dark tail.

On the day of the sighting and perhaps for the previous week, an enormous Menhaden (*Brevoortia tyrannus*) kill in conjunction with a severe cold front to the north attracted unprecedented concentrations of gulls. During 3 days of observations, approximately 750,000 gulls were present in the less than 1-square-mile area of Hatteras Inlet. In January 1980, I observed roughly 1,000,000 gulls from the Hatteras ferry, but they were more uniformly distributed throughout Pamlico Sound along the ferry route.

The literature indicates a single previous sight record of Thayer's Gull from North Carolina (Carlson 1973). However, there are some problems with the report. The bird described is either an adult or subadult whereas virtually every confirmed record for eastern North America is of an immature bird (Fussell et al. 1982). Second, the essentially single character basis of identification, a dark eye, is problematic in spite of statements to the contrary by unnamed "personnel at the National Museum of Natural History." We are not told if the bird is fully adult or if it is a subadult. This distinction has significance. On rare occasions, subadult or near-adult Herring Gulls apparently retain melanin pigment in the eye. For example, on 21 July 1976, at Alma, New Brunswick, Canada, Kevin Hintsa and I studied such a bird at great length. When the bird was perched, no immature plumage characters were noted. However, when the bird took flight, some brown markings on the back and tail were visible. The bird unmistakably had a dark, mahogany-brown eye and brownish eye-ring. Carlson (1973) mentions a dull reddish-brown eye-ring "close in tone to the brown iris." This further suggests a bird not yet fully adult, as the eye-ring color of an adult Thayer's Gull is purple-pink to rose, at least well into December (Gosselin and David 1975, Lehman 1980, personal observations). Carlson's bird was seen 26 October, which would represent an early date for the species. Unfortunately, the wing-tip pattern in flight was not observed. In the folded wing, Thayer's and Herring Gulls (adults) do not reliably differ enough for

primary markings to be diagnostic (Gosselin and David 1975, Lehman 1980). A number of authors (e.g. Gosselin and David 1975, Fussell et al. 1982) have stressed the need to "build a case for identification," using all field marks; but of particular importance is the need to see the white under-primary pattern. While it is likely that increased observer awareness will turn up more Thayer's Gulls, the vast majority should be immatures. This is consistent with findings throughout the East as well as adult-immature ratios of the more common "white-winged gull" species in North Carolina.

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First Spring Record of Western Kingbird from South Carolina Piedmont

BILL HILTON JR.
Science Department
Northwestern High School
Rock Hill, S.C. 29730

On 28 March 1982, I led a group from the University of Minnesota on a birding foray to Kings Mountain State Park in western York County, S.C. Most of the park, with the exception of creek bottomlands, is covered by mesic upland mixed hardwood/pine forest with rather limited understory and shrub growth.

While spotting ducks from the patio south of the Crawford Lake bathhouse, near the park's center, we saw a robin-sized bird fly onto a bare branch about 4 m above our heads. Based upon its size and erect posture, it appeared to be a large flycatcher (either a *Myiarchus* or a *Tyrannus*). At first glance I thought it was a Great Crested Flycatcher (*M. crinitus*) because of a yellowish cast to its belly. However, I noted a light-colored throat that contrasted with the yellowish belly, just the opposite effect of what is typical of Great Crested Flycatchers. As the bird moved slightly on its perch, it revealed white outer tail feathers. After the bird moved higher in the tree, we looked at it through 7X binoculars at a distance of 6 m for about a minute. At that time, two of the students said that the bird appeared to be a Western Kingbird (*T. verticalis*), and I concurred.

As a second party of observers approached, the bird flew to the north, and a second flycatcher which may have been perched nearer the lakeshore, joined it in a tree about 30 m from us in open woods. White outer tail feathers showed on both birds as they flew, and the second party agreed with our initial identification. Conditions were essentially perfect for observing. The sky was clear and the sun was low to our side as we looked at the first bird in partial shade at about 1000.

Although Western Kingbirds are not rare along the South Carolina coast in fall, inland records are decidedly rare (Sprunt and Chamberlain 1970). The only previous spring report for the state appears to be one bird seen at Folly Island on 14 June 1980 (Forsythe and Cornwell 1980). To the best of my knowledge, the York County birds represent the first spring sighting of the species from the South Carolina piedmont.

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The Breeding Status of the Blue-winged Warbler in South Carolina

DOUGLAS B. MCNAIR

Route 1, Box 324

Six Mile, S.C. 29682

This note reviews breeding-season records of the Blue-winged Warbler (*Vermivora pinus*) in South Carolina. Hamel et al. (1982) map the breeding range of the species in Georgia and the Carolinas, but they do not indicate any nesting record for South Carolina. The map of Hamel et al. (1982) is still correct, despite several more recent sightings during the breeding season. The statement of the sixth A.O.U. *Check-list* (1983) that the Blue-winged Warbler breeds in western South Carolina is in error.

Four breeding-season records of single singing males exist from northwestern South Carolina.

- (1) 12 to 15 June 1974, near Central, Pickens County, 229 m (750 feet), shrubby thicket in powerline clearing, H.E. LeGrand Jr. (Chat 39:58-59, 1975). Average height of habitat is 2-3 m;
- (2) 7 to 19 May 1977, near Seneca, Oconee County, 204 m (670 feet), moist shrubby thicket, S.A. Gauthreaux Jr. and H.E. LeGrand Jr. (Chat 42:18, 1978). Another or the same singing male was at this exact site on 4 May 1976 (S.A. Gauthreaux Jr., pers. comm.). Average height of habitat is 4 to 5 m; dominant tree is Tag Alder (*Alnus serrulata*);
- (3) 17 June 1983, Mountain Rest, Oconee County, 534 m (1750 feet), moist shrubby thicket along a stream, D.B. McNair (Chat 48:25, 1984). Average height of habitat is 4 to 7 m; dominant trees are Tag Alder and Red Maple (*Acer rubrum*);
- (4) 16 May 1984, below Lake Jocassee, Oconee County, 427 m (1400 feet), thicket with scattered saplings in a powerline clearing dissected by two narrow inlets of Lake Keowee, D.B. McNair. Average height of habitat is 2 to 6 m; dominant trees are Flowering Dogwood (*Cornus florida*), Tulip Tree (*Liriodendron tulipifera*), and oaks (*Quercus* sp.).

I wish to stress two points. First, none of the singing males were relocated after the last (or only) date recorded above at each site nor were females seen. Thus, the evidence suggests all these males were unmated despite their occurrence during the breeding season in apparently favorable habitat. Second, only the last two records were from elevations of 427 m (1400 feet), or higher, where Blue-winged Warblers are known to breed at the nearest localities in Georgia and North Carolina (Hamel et al. 1982). The only published May or June records of the species in the last 11 years suggest that in South Carolina the Blue-winged Warbler is outside its breeding range. No known or presumed breeding record exists for South Carolina, but only evidence for possible breeding.

Field Notes in Briefs for the Files of *Chat* cited above are not referenced below.

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BACKYARD BIRDING

(Continued from Page 38)

will only feed birds in conventional feeders. But it does seem strange to go outside and have no birds coming to greet me. They act like normal wild birds here; they either ignore me, or fly away!

Life is constantly changing, bringing with it new challenges and opportunities. We look forward to new things in our new setting. But, once a birder, always a birder. We are content to look back on our years of the monster, recalling the pleasures and lessons learned. During those years, we sharpened our skills in identifying the many species we encountered—seeing them, learning their songs and calls from tiny fledgling to mature breeding adult. We made volumes of notes on behavior, some of which we have already shared with others. And, speaking of other birders, we made so many friends in Raleigh and Wake County and hope to keep up our contacts. We are looking forward to getting to know the birders here in Asheville and Buncombe County, too.—GAIL T. WHITE-HURST, 52 Lakeshore Drive, Asheville, N.C. 28804.

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1984)

EARED GREBE: Unusual and somewhat early was one seen at a pond at the eastern end of Ocracoke Island, N.C., on 7 and 8 October by Hal Wierenga, Bob Lewis, and others.

BLACK-CAPPED PETREL: Chris Haney counted 31 from 16 to 19 October about 80 miles ESE of Charleston, S.C.

CORY'S SHEARWATER: Hurricane Diana forced individuals ashore in North Carolina. On 15 September, Skip Prange saw three exhausted birds at Cape Lookout light. On 21 September, John Fussell found two dead at Fort Macon State Park; and Gilbert Grant found six dead at West Onslow Beach, plus another dead the following day. Perry Nugent observed one in flight over the ocean on 10 November at Folly Beach, S.C.

WHITE-FACED STORM-PETREL: Very rare were single petrels seen on pelagic trips off Oregon Inlet, N.C., by Dave Lee on 14 and 16 August.

LEACH'S STORM-PETREL: Notable for South Carolina were individuals seen 40 miles SE of Charleston on 12 August (Dennis Forsythe) and captured aboard a boat 70 miles SE of Charleston on 17 October (Chris Haney). The latter bird was photographed and released.

BAND-RUMPED STORM-PETREL: Surprising numbers were seen by Dave Lee on his pelagic trips to the Gulf Stream off Oregon Inlet in summer and early fall, highlighted by 29+ on 14 August. Seldom seen in South Carolina, one was carefully observed by many members of the Charleston Natural History Society on a trip about 80 miles SE of Charleston on 7 August.

WHITE-TAILED TROPICBIRD: Gilbert Grant found a dead adult, a victim of Hurricane Diana, at West Onslow Beach, N.C., on 21 September.

MASKED BOOBY: Considered casual in the Carolinas only several years ago, records continue to accumulate rapidly. There were reports from three pelagic trips: two off Oregon Inlet on 14 August (Dave Lee), one off Hatteras, N.C., on 1 September (Robert Ake, Paul DuMont), and an adult seen on 23 September off Charleston (Dennis Forsythe).

NORTHERN GANNET: Melinda Welton approached to within 15 feet of a sick or injured subadult at Jordan Lake, Chatham County, N.C., on 25 and 26 August. This record, very early for the species, is also the first inland record for the state.

AMERICAN WHITE PELICAN: One was seen along the Ashley River at Charleston from 23 August to 1 November by Steve Compton; another was at Mad Inlet near Sunset Beach, N.C., on 21 October, as seen by Frank Nesmith and Catherine McCoy.

GREAT CORMORANT: A good North Carolina count was three immatures seen on buoys at Masonboro Inlet, N.C., on 24 November by Greg Massey.

DOUBLE-CRESTED CORMORANT: Locally rare were two at Blewett Falls Lake, N.C., on 29 October (Douglas McNair) and one at Lake Townsend, near Greensboro, N.C., from August to 15 October (Herb Hendrickson).

MAGNIFICENT FRIGATEBIRD: A female was seen flying over Charleston harbor on 2 August by Donald Hammond.

ANHINGA: Unusual in the piedmont was an immature seen soaring with vultures near York, S.C., on 8 September by Bill Hilton Jr. and party.

TRICOLORED HERON: Ricky Davis counted 21, a presumed piedmont record, at Jordan Lake, N.C., on 16 September. The birds were flying with a large mixed flock of waders in the early morning, obviously just having departed a roost.

LITTLE BLUE HERON: An excellent total for the piedmont was 98 tallied by Ricky Davis at Falls Lake, N.C., on 25 August.

CATTLE EGRET: Rare for the mountains were one at Lake Lure, N.C., on 8 September and two there on 19 September (Ron Warner). Five were seen near Raleigh, N.C., on 1 October (Ross Jervis), and another was late on 21 November at Darlington, Halifax County, N.C. (Frank Enders).

GREEN-BACKED HERON: Late was an individual seen by Paul Hart at Crowders Mountain State Park, N.C., on 13 November.

BLACK-CROWNED NIGHT-HERON: Notable were two immatures observed by Ricky Davis at Falls Lake on 11 November.

GLOSSY IBIS: One was observed at Halifax, N.C., on 26 April by Frank Enders.

TUNDRA SWAN: A high piedmont count was 10 seen by Allen Bryan and Ricky Davis at Jordan Lake on 3 November.

GREATER WHITE-FRONTED GOOSE: Always noteworthy in the Carolinas were two along the North Santee River, S.C., on 12 November (Peter Manigault) and two also at Lake Mattamuskeet, N.C., on 16 November (Allen Bryan).

SNOW GOOSE: Individuals of the white phase were locally rare near Cape Carteret, N.C., on 1 November (Henry Haberyan) and at Falls Lake on 7 October (Ricky Davis).

NORTHERN PINTAIL: Ron Warner observed a male on 30 and 31 October on Lake Osceola in Hendersonville, N.C.

GADWALL: Infrequently reported in the mountains were individuals noted by Douglas McNair at Cashiers, N.C., on 21 October, and at Hendersonville on 9 November by Ron Warner.

EURASIAN WIGEON: One was seen by Perry Nugent at Magnolia Gardens, near Charleston, on 1 December.

RING-NECKED DUCK: Douglas McNair observed an early individual on Cashiers Pond in Cashiers, N.C., from 29 September to 2 October.

GREATER SCAUP: A good inland count was 14, as noted by David Wright on Lake Norman, N.C., on 25 October.

BLACK SCOTER: An adult male was most unusual at Falls Lake, N.C., on 11 November (Ricky Davis).

WHITE-WINGED SCOTER: A noteworthy total for the Carolinas was 30 seen flying at Topsail Inlet, N.C., on 17 November by Greg Massey. Two migrants were rare at Jordan Lake, N.C., on 3 November (Allen Bryan, Ricky Davis).

OSPREY: James and Elizabeth Pullman had a late Osprey at Jordan Lake on 27 November.

MISSISSIPPI KITE: Absolutely remarkable were approximately 60 seen flying over a large cow pasture at Mesic, Pamlico County, N.C., on 29 September by Clarence Belger. Tropical Storm Isadore, which passed through the Gulf States and then off our coast in late September, was certainly responsible for bringing this flock to North Carolina. Single kites of note were one near York, S.C., on 2 August (Bill Hilton Jr., Russ Rogers) and at I-95 along the South Carolina-Georgia border on the late date of 5 October (Dave Lee).

BALD EAGLE: An excellent inland count was seven immatures and one adult, noted by Ricky Davis at Falls Lake on 25 August.

BROAD-WINGED HAWK: Rare on the coast was a migrant at Morehead City, N.C., on 17 September (John Fussell).

GOLDEN EAGLE: Sidney Gauthreaux observed an immature at the Webb Wildlife Center west of Garnett, S.C., on 29 November.

MERLIN: Inland sightings for the fall season were individuals in northern York County, S.C., on 31 August (David Wright), near Clemson, S.C., on 8 October (Charlie Wooten), and at Falls Lake on 21 October (Allen Bryan, Ricky Davis).

PEREGRINE FALCON: One was seen by Ricky Davis along I-85 at Falls Lake on 26 September. Good totals of coastally migrating falcons were 10 on 28 September at Hatteras and Ocracoke Islands (Davis, Allen Bryan) and 15 on 29 September at Sullivans Island, S.C. (Perry Nugent, Charlie Walters).

CLAPPER RAIL: Very rare inland was one found dead in downtown Raleigh on 28 September by John Funderburg. The rail had undoubtedly flown into a building during nighttime migration.

COMMON MOORHEN: Immatures were seen inland near Fayetteville from 5 to 10 September (Claude Rankin, Philip Crutchfield) and at Jordan Lake on 18 November (Ricky Davis).

BLACK-BELLIED PLOVER: Individuals were seen on many dates at Falls and Jordan Lakes during the fall, with peak counts of five at Falls on 27 October (Chapel Hill Bird Club) and 14 at Jordan on 3 November (Allen Bryan, Ricky Davis). Bryan also had two near Burlington, N.C., on 10 October.

LESSER GOLDEN-PLOVER: This species was observed inland in the fall in North Carolina at Winston-Salem, Pineville, Lake Norman, Jordan Lake, and Falls Lake; and in inland South Carolina in York County and at Townville. The peak count was just three, at Falls Lake on 22 September (Ricky Davis); and late was one at Jordan Lake on 14 November (Allen Bryan).

SEMPALMATED PLOVER: Very late inland were one seen on 27 October in Gaston County, N.C., by Harriet Whitsett, Clare Walker, and Heathy Walker, and two observed on 3 November at Jordan Lake by Allen Bryan and Ricky Davis.

LESSER YELLOWLEGS: A late yellowlegs was studied in western Forsyth County, N.C., on 16 November by Barbara Page and Ramona Snively.

UPLAND SANDPIPER: Rare inland in fall were individuals on 4 August at Jordan Lake (Ricky Davis, Harry LeGrand) and on 28 July and 2 September at McAlpine Sewage Treatment Plant near Pineville (Clare Walker, Dave Frech). Davis had a good count of 12 at the New Hanover County airport, N.C., in early August.

LONG-BILLED CURLEW: Dennis Abbott saw one along the Folly Island, S.C., causeway on 23 September, and Charlie Lyon saw another at Fort Fisher, N.C., on 18 November.

SANDERLING: During the first 10 days of September, small numbers were observed inland in North Carolina at Beaverdam Reservoir, Falls Lake, and Jordan Lake as well as at Clemson in South Carolina.

WHITE-RUMPED SANDPIPER: Single birds were rare inland in North Carolina at Falls Lake, Jordan Lake, central Halifax County, Burlington, and Gaston County. A good coastal count was 75+ at Ocracoke Flats, N.C., on 24 August (Allen Bryan).

BAIRD'S SANDPIPER: One was observed inland at Charlotte by David Wright, Heathy Walker, and others from 8 to 14 September. Coastal birds were noted in North Carolina at Ocracoke on 24 August (Allen Bryan), Cape Hatteras point on 27 September (Bryan, Ricky Davis), and Sunset Beach on 18 October (Philip Crutchfield); and in South Carolina at Folly Beach on 9 and 11 August (Charlie Walters et al.) and Huntington Beach on 18 August (Walters, Chris Marsh).

PURPLE SANDPIPER: Douglas McNair counted 210 at a roost at Breach Inlet, Sullivans Island, S.C., on 19 November.

DUNLIN: Good counts inland were 17 at Jordan Lake on 3 November (Allen Bryan, Ricky Davis), 9 in Gaston County, N.C., on 30 October (David Wright), and 9 at Burlington on 1 November (Bryan).

STILT SANDPIPER: An overdue first for the Charlotte area was one at the Riverbend Ash Ponds in Gaston County from 21 to 27 October (David and Jill Wright). At inland sites where regularly seen, peak counts were four near Vass, N.C., on 10 August (Dick Thomas, Steve Prior), three at Jordan Lake on 6 October (Allen Bryan et al.), six at Falls Lake on 20 October (Harry LeGrand), and six near Clemson on 18 September (Charlie Wooten, Steve Wagner).

BUFF-BREASTED SANDPIPER: Two individuals were detected near Charleston on 27 September by Perry Nugent, Dennis Abbott, and Charlie Walters; whereas single birds were seen in North Carolina at Beaverdam Reservoir, Carowinds park near Pineville, McAlpine Sewage Treatment Plant near Pineville, and Cape Hatteras point. An excellent count of seven was made by Allen Bryan at Falls Lake on 20 September.

LONG-BILLED DOWITCHER: Always noteworthy inland, five was a good total near Halifax,

- N.C., on 11 November (Frank Enders); also, one was seen at Falls Lake on 20 September, and two were there on 21 October (Allen Bryan).
- WILSON'S PHALAROPE:** Inland sightings were reported near Pineville on 19 August and again from 8 to 12 September (David Wright et al.), at Falls Lake on 9 September (Allen Bryan, Ricky Davis), and at Clemson from 29 September to 1 October (Charlie Wooten, Steve Wagner).
- POMARINE JAEGER:** On pelagic trips off Charleston, an early individual was seen on 7 August by the Charleston Natural History Society, and five were noted by Dennis Forsythe on 21 October.
- PARASITIC JAEGER:** Much less often seen on pelagic trips than the previous species, singles were observed off Charleston on 23 September and 21 October by Dennis Forsythe.
- SKUA SP.:** Chris Haney observed an unidentified skua on 16 October, approximately 70 miles SE of Charleston.
- BONAPARTE'S GULL:** One was early at Hatteras Inlet on 24 August, as noted by Allen Bryan.
- RING-BILLED GULL:** Out of season on inland lakes were one or two all summer at Lake Norman (David Wright), one at Jordan Lake on 4 August (Ricky Davis, Harry LeGrand), and two at Lake Townsend near Greensboro on 25 August (Herb Hendrickson).
- HERRING GULL:** Albert Conway saw an early individual on 3 September on the Catawba River in York County, S.C.
- ICELAND GULL:** Extremely early and unusual was an adult seen by Dennis Forsythe at Sullivans Island on 11 September, one day after the passage of Hurricane Diana.
- LESSER BLACK-BACKED GULL:** One of the earliest records for the Carolinas was one seen (with two Great Black-backed Gulls for comparison) at North Pond on Pea Island by James and Elizabeth Pullman on 6 October.
- SANDWICH TERN:** An excellent late fall total was 80 at Huntington Beach State Park on 20 November (Douglas McNair).
- FORSTER'S TERN:** Herb Hendrickson had a good piedmont count of 12 on Lake Townsend on 3 August.
- LEAST TERN:** Quite scarce after September in our area, one was observed on 13 October at Oregon Inlet by James and Elizabeth Pullman.
- BRIDLED TERN:** Chris Haney saw nine on 18 October SE of Charleston.
- COMMON GROUND-DOVE:** Unusually far inland was one carefully observed by Ruth Young near Fairview, Buncombe County, N.C., on 31 October.
- BLACK-BILLED CUCKOO:** Individuals were seen near Chapel Hill on 4 October by Bill and Margaret Wagner; at Cornelius, N.C., on 10 October by David Wright; and at Seneca, S.C., on 13 October by Sidney Gauthreaux. Will Post banded one at Sullivans Island on 22 October.
- YELLOW-BILLED CUCKOO:** Will Post collected a late individual (specimen to Charleston Museum) at Mount Pleasant, S.C., on 2 November.
- RUBY-THROATED HUMMINGBIRD:** A high count of 120 was noted at Mount Pleasant on 4 October by Will Post.
- OLIVE-SIDED FLYCATCHER:** The only reported fall sighting was one studied by Jay Carter and Julie Moore in the western part of Fort Bragg, N.C., on 1 September.
- YELLOW-BELLIED FLYCATCHER:** Will Post netted one on 4 September, two on 7 September, and another on the following day at Mount Pleasant. These were the only ones reported for the fall.
- LEAST FLYCATCHER:** Individuals were netted by Will Post at Mount Pleasant on 25 August and 28 September.
- WESTERN KINGBIRD:** In addition to several coastal reports this fall, kingbirds were well inland in Bladen County, N.C., on 15 September (Dave Lee, Wayne Irvin) and in Chowan County, N.C., on 25 November (Allen Bryan).

SCISSOR-TAILED FLYCATCHER: Rare and unusually late was an immature seen by Ted Best at Cedar Island, N.C., on 18 November.

HORNED LARK: Six seen at Frank Lisk Park at Concord, N.C., on 6 September (Russ Rogers) likely indicate breeding at that site.

CLIFF SWALLOW: David Wright observed several pairs, probably nesting birds, at Cowan's Ford Dam at Lake Norman during the summer.

FISH CROW: A huge roost of 10,000+ was reported at Drum Island near Charleston on 28 and 29 November by Douglas McNair and Will Post.

COMMON RAVEN: Douglas McNair observed 35 at a roost at Mount Mitchell State Park, N.C., on 3 October.

CAROLINA WREN: At an unusually high elevation (5500 feet) were two seen by Douglas McNair along the Blue Ridge Parkway near the entrance to Mount Mitchell State Park on 3 October.

BEWICK'S WREN: David Wright saw a migrant in a fence row in southern Iredell County, N.C., on 27 September. He noted the white tail spots as the wren jerked and spread its tail.

SEDGE WREN: Notable for the Charlotte area were wrens observed by David Wright in Gaston County, N.C., on 6 October and in York County, S.C., on 17 October.

MARSH WREN: Infrequently seen in the mountains was one reported by Jerry Young on 14 October at Fairview.

GRAY-CHEEKED THRUSH: Quite early was one seen at Mount Mitchell on 9 September by Ruth Young.

WARBLING VIREO: Seldom observed in the Carolinas in the fall, one was carefully observed at Raleigh on 3 October by Gail Whitehurst.

PHILADELPHIA VIREO: After the record-breaking flight in the fall of 1983, fall sightings in 1984 were somewhat near normal. Philadelphias were reported on four dates in the Clemson area from 23 September to 16 October (Charlie Wooten, Sidney Gauthreaux); and others were seen at Jordan Lake on 20 September (Allen Bryan), at Beaverdam Reservoir on 22 September (Ricky Davis), and in Gaston County on 22 September (David Wright, Heathy Walker, Harriet Whitsett).

BLUE-WINGED WARBLER: Will Post banded six at Mount Pleasant from 4 September to 2 October.

BREWSTER'S WARBLER: One hybrid was seen by Pat and Lydia Hobson near Chapel Hill on 5 September.

TENNESSEE WARBLER: Charlie Wooten counted 74 on the Clemson University campus at Clemson on 24 October, and one was late at Charlotte on 27 November, as observed by Heathy Walker.

ORANGE-CROWNED WARBLER: Heathy Walker noted one regularly at Charlotte from 25 November to at least 15 December.

NASHVILLE WARBLER: Of the many inland records, the most notable was a late individual at Raleigh on 4 November (Gail Whitehurst). Coastal records were of single birds at Magnolia Gardens near Charleston on 15 September (Dennis Forsythe), at Bodie Island, N.C., on 2 October (Floyd Williams, Paul Hart), and at Huntington Beach State Park on 13 October (Perry Nugent et al.).

BAY-BREASTED WARBLER: One was rather late at Clemson, as seen by Charlie Wooten on 9 November.

CERULEAN WARBLER: Very rare in fall migration were females or immatures observed by Harry LeGrand at Raleigh on 3 August and at Townville on 14 September by Charlie Wooten and Steve Wagner.

(Continued on Page 40)

BOOK REVIEWS

THE KINGFISHER

David Boag. 1982. The Blandford Press, Dorset, England. Illus. Index. 120 p.

This colorful book is not only fascinating but also fairly easy reading. David Boag deals with all aspects of the species' life in straightforward language that will neither intimidate the layman nor offend the professional. Boag has a thorough knowledge of the Kingfisher (*Alcedo atthis*) through many years of observing this mostly European bird. He narrates many anecdotes to advance his arguments logically. Whenever he contradicts popular theory, he presents enough data to convince the reader, but not to the point of boredom. The book is further enhanced by a chapter on the Kingfisher in myth and legend and an appendix on photography techniques. The photographs are sharp and carefully laid into the text. Anyone who skims this well-done book will surely be drawn to read it.—P.R. FORD

BIRDS OF NORTH AMERICA. 1983. Chandler S. Robbins, Bertel Brunn, and Herbert S. Zim. Illus. by Arthur Singer. Golden Press, New York. 7½ x 4¾ inches, 360 p. Hardcover, \$10.95; softcover, \$7.95.

FIELD GUIDE TO THE BIRDS OF NORTH AMERICA. 1983. National Geographic Society, P.O. Box 1640, Washington, D.C. 20013. 8 x 5 inches, 464 p. Softcover, \$13.95 plus \$3 for postage and handling. Not sold in book stores. Available by mail from National Geographic Society and American Birding Association. NGS offers the guide in sets with supplemental materials including a recording of bird sounds.

The ideal bird guide has not been written—and never will be. The very same aspects of bird study that make it a challenging hobby or career also make describing all the species of North America (or even just eastern North America) adequately in one small book an impossibility. Before daring to criticize the two books presently being considered or any other field guide, users should first acknowledge the complexity of the problems facing the authors and illustrators. On the desk before me are copies of Chapman's *Handbook of Birds of Eastern North America* (1897), a First Edition of Peterson's *A Field Guide to the Birds* (1934), a Second Edition Peterson (1959), a Fourth Edition Peterson (1980), a First Edition Robbins (1966), the Revised Edition Robbins (1983), and the National Geographic Society guide (1983). Rapidly growing knowledge and constantly changing bird distributions made each one in some respects outdated when it came off the press.

Chapman's Preface, written in January 1895, begins: "If this book had been written in the last century it might have been entitled 'Ornithology made Simple, or How to Identify Birds with Ease, Certainty, and Dispatch.' It may be unworthy so comprehensive a title, nevertheless I have made an honest endeavor to write a book on birds so free from technicalities that it would be intelligible without reference to a glossary, and I have tried to do this in a volume which could be taken afield in the pocket." Many fine ornithologists, including Roger Tory Peterson, took Chapman's *Handbook* afield in their

pockets. Today, only a decade short of a century since Chapman penned those words, bird watchers cannot imagine trying to identify a new sparrow by running through eight pages of keys and consulting a few small black-and-white drawings. Peterson's first field guide, which was decidedly primitive compared to later editions, was truly "Ornithology made Simple." All subsequent North American bird guides, especially the Robbins edition that was the first one to put text and range maps on pages facing color plates, have been striving to achieve field identification "with Ease, Certainty, and Dispatch." And therein lie the seeds of many difficulties.

As field guides treat larger geographic areas, illustrate more birds in elegant full-color plates (with several plumages shown for many species), and offer range maps instead of generalized range descriptions, the opportunities for errors and oversimplifications multiply rapidly. At the same time, the users—most of whom have never seen a tray full of study skins, all the same species but no two exactly alike—are given a false sense of security, a belief that all birds can be identified in the field with certainty, if not with ease and dispatch. The NGS guide, with Jon L. Dunn and Eirik A. T. Blom as chief consultants, was strongly influenced by the West Coast style of field identification, which stresses going beyond the species level and the easily recognized sex differences to age classes and subtle sex or population characters. As bird study attracts more and more amateurs who go afield with a backpack full of field guides, a powerful telescope, and a strong competitive spirit, editors must become wary of glib descriptions of migrating hawks by age, sex, and race, or of jaegers by age class and color phase. Distinctions that appear simple on the printed page are rarely that clear-cut in the field, where molting birds are unlike anything in any book and light conditions play tricks on everyone. Knowledgeable observers know when to let the bird be just "an accipiter" or "an immature jaeger." In other words, field guides must be used with discretion; sometimes there is no substitute for a collected specimen.

The NGS guide was produced by a large staff in cooperation with numerous artists and consultants. Among the artists is H. Douglas Pratt, whose first pen-and-ink drawing appeared on the cover of *Chat* in 1967. Doug's nuthatch plate is particularly pleasing to me. The artwork as a whole is very good and remarkably well coordinated, considering that the identification plates are the work of 13 artists. The only major flaw I see in this book is the use of yellow as a color in the range maps. In many places, particularly where narrow bands follow coastlines, the yellow, unless viewed under a strong light, is obscured by the underlying black lines.

The Revised Edition of the Robbins guide is just that. Some of the plates have been redrawn to add species and update bird names, the range maps have been improved, and the typeface selected for the text is easier to read than the sans serif face of the First Edition. However, at least in my copy, the color reproduction is not as good as in the First Edition. The yellows are exaggerated on several plates, particularly in the flycatchers. Other plates are too pink or too blue. I hope that the entire pressrun does not suffer from these defects.

Guy McCaskie compares the Robbins and NGS guides in a lengthy review in the February 1984 issue of *Birding* (16:25-32). He offers an extensive list of good and bad points. Where I have adequate knowledge of the point in question, I tend to agree with his judgments. However, one of his statements reinforces my belief that the ideal guide never will be published. He takes the authors of the NGS book to task for saying "yellow

ridge on top of adult's bill" instead of the (to McCaskie) more appropriate "yellow culmen of adult's bill." I am far more concerned that the illustration on page 10 has a single line labeled "culmen" pointing to the top of the upper mandible without any indication that this term applies only to the central ridge running from the base of the bill to the tip. Someone reading "yellow culmen" and consulting that diagram might well expect the entire upper mandible to be yellow. The line labeled "mantle" also points to a single spot on the back (apparently following terminology proposed for use in Great Britain), although in the text (gull accounts) the word is used, as in other North American guides, to refer to the back, the scapulars, and the upper surface of the wings collectively. Apparently the time has come for adding a glossary to the standard field guide. In trying to deal with details formerly of concern only to professional and advanced amateur ornithologists armed with an adequate series of study skins, the NGS guide is unquestionably leading field identification away from the species-level simplicity prized by Chapman, Peterson, and Robbins.

Despite their various shortcomings, the Robbins and NGS North American bird guides, along with Peterson's Eastern guide, give Carolina bird students three excellent choices. Because the Peterson guide is restricted to eastern North America, it remains the recommended first choice for beginning bird students. The large page size, generous margins, and detailed illustrations of NGS guide give it a luxurious appearance that appeals to nearly everyone. The Robbins guide still has a unique feature that I find very helpful: the two double-page spreads featuring male warblers in spring and immature warblers in fall. Serious bird students will pack all three of these books (and probably several others) in the car, but the Peterson and Robbins guides undoubtedly will be preferred in the field because of their smaller size, lighter weight, and lower replacement cost if dropped in a swamp.—EFP

THE PEACOCKS OF BABOQUIVARI

Erma J. Fisk. 1983. W.W. Norton, New York. Illus. by Louise Russell. 284 p. \$14.95.

In 1978 Erma J. Fisk, a 73-year-old widow, left the warmth of Florida to spend the winter on a lonely ranch beneath Mount Baboquivari in Arizona. Her purpose in going there was to count birds for the Nature Conservancy. Appropriately, this chronicle of her work there has been published for the benefit of the Conservancy.

Mrs. Fisk spent one of Arizona's rainiest winters manning up to 14 mist nets in which she caught 70 species of birds. Whereas the disappointment of few birds per day might make dull reading, Mrs. Fisk avoids this by filling her journal in a conversational manner with descriptions of people, mini-essays, spunky but gentle humor, and trivia, including the number of feathers on a Ruby-crowned Kinglet. Although her journal would have benefitted from some judicious editing to delete repetition and improve hastily written sentences, the book should be enjoyed by naturalists and bird students. Mrs. Fisk constantly reminds the reader of the marvels of nature and the fact that amateurs can contribute to ornithology.—P.R. FORD



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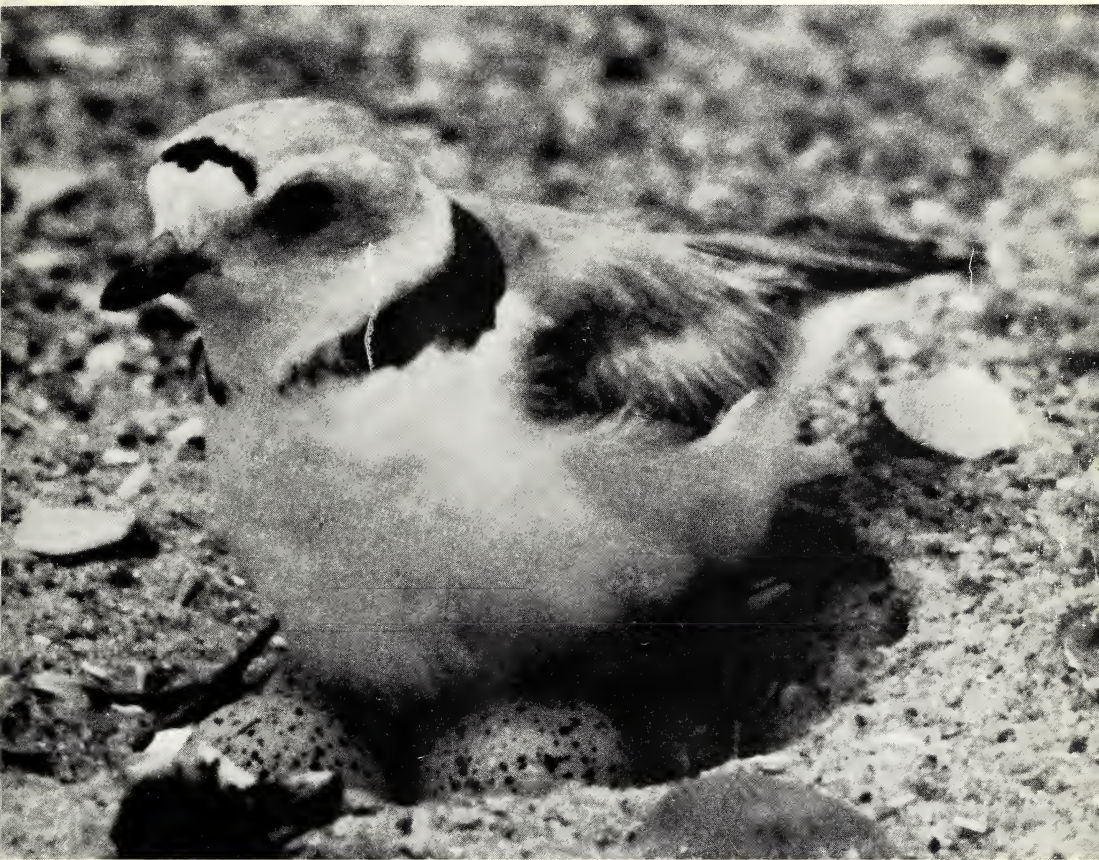
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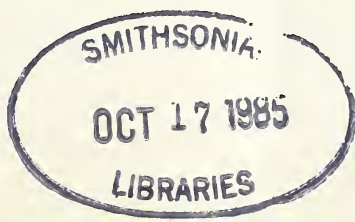
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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—A Piping Plover incubates four eggs laid in a shell-lined scrape in the sand at Cape Hatteras, N.C. (Photo by James F. Parnell)

Breeding Habits, Nestling Development, and Vocalizations in the Summer Tanager

ELOISE F. POTTER

Abstract. A pair of Summer Tanagers (*Piranga rubra*) nested near Zebulon, Wake County, N.C., in the spring of 1983. Nest contents were examined almost daily from 21 May, the first day of incubation, through fledging of the young on 12 June. Incubation and nestling periods were determined. Parental behavior, development and behavior of nestlings, and vocalizations are described. Results are compared with observations of other nests of the species from the same area. Evidence indicating rearing of second broods is summarized.

Although the Summer Tanager (*Piranga rubra*) is a common breeding bird across most of the southern United States, very little is known about its nesting habits and development of the young. Several recent general works (H.H. Harrison 1975, C. Harrison 1978, Potter et al. 1980) add little to the account in Bent (1958), which gives the incubation period as "said to be 12 days," a statement apparently based on Audubon (1840). Wisely omitting Audubon's belief that the male and female sit upon the eggs alternately, Bent concludes, "Information on the development and care of the young seems to be lacking, beyond the fact, mentioned by Weston (MS.), that both sexes are known to feed the young." Although the Summer Tanager is generally assumed to be single-brooded, Mengel (1964) mentions an apparently mated male "feeding grown young" in the territory of an incubating female on 24 June.

In North Carolina the Summer Tanager breeds in residential districts and open woodlands statewide, though it is found in the mountains mostly below 2,000 feet (Potter et al. 1980). It nests regularly in or near my yard 3.5 miles N of Zebulon, Wake County, N.C. The mature mixed pine-hardwood habitat is bounded on two sides by the fairway of a golf course, and a spring flows through the lower portion of the 3.5-acre tract. In a previous paper (Potter 1973) I reported observations of five Summer Tanager nests found from 1966 through 1972 plus one unfinished nest. Only one of these nests, that of the all-red female studied in 1968, fledged young. The present paper adds data from a 1983 nest that was low enough to permit regular examination of the two nestlings from the day of hatching through fledging.

METHODS

Seated approximately 30 feet from the nest, I spent a total of 20 hours taking notes on behavior of the breeding Summer Tanagers almost daily from the date of nest discovery through fledging of the young. Additional incidental observations were recorded throughout the nesting cycle. I viewed the birds' activities with the aid of a 7 x 42 binocular and moved about the yard as necessary to follow the adults when they left the immediate vicinity of the nest. Using a household step-stool, I examined the contents of the nest almost daily. Although I did not measure the eggs or young, I did examine the nestlings in hand on several occasions. All times are Eastern Daylight Time.

RESULTS

Arrival. The first Summer Tanager of the 1983 season was heard in my yard on 29 April, a later than average arrival date. On 8 May I noted that a pair appeared to be on territory around the White Oak (*Quercus alba*) used as a nesting site three times in previous years.

Nest. Construction was not seen in 1983, but earlier observations (Potter 1973) indicate that the female builds the nest alone. Working mostly in the early morning, she gathers materials from the immediate vicinity of the nest tree. Mengel (1965) also reports construction by the female.

The 1983 nest was situated about 9 feet from the trunk and 3 feet from the tip of a horizontal bottom limb of a 50-foot Red Oak (*Q. rubra*) standing at the fork of two paths in my wooded yard. The site is adjacent to the opening created by the house and approximately 70 feet from the White Oak previously used by nesting Summer Tanagers. The nest was built in a fork, one branch of which had a sturdy twig extending under the cup. The outer portion of the nest was primarily dried pine needles. A few dried leaves, or parts of them, and several dried male pine cones were mixed with the pine needles, and spider webs were draped over most of the exterior sides of the nest cup. The interior was thinly lined with dried grasses, some of which had the seed heads still attached and forming part of the rim. The rim of the nest cup was almost perfectly round. When the nest was in full sun, light showed through the bottom. Exterior dimensions of the nest *in situ* were 4 inches in diameter and 2 inches deep, exactly the same measurements reported by Bent (1958). Interior dimensions were 2.75 inches in diameter and 1.75 inches deep, which is considerably greater than the 0.5-inch interior depth of the nest described by Bent (1958). The nest tilted slightly toward the southwest, and a cluster of leaves growing immediately above it provided shade and camouflage. Although some observers report Summer Tanager nests to be easily dislodged, this one survived three severe storms.

Height of the nest above ground was 8.25 feet, the lowest I have ever seen and lower than the range of 10 to 35 feet reported by Bent (1958). However, this height is well above the lowest given by Burleigh (1958) for Georgia (6-40 feet) and by Sprunt and Chamberlain (1970) for South Carolina (4-40 feet). Mengel (1965) reports a range of 5 to 45 feet with a median height of 12 feet for 25 nests studied in Kentucky.

Egg-laying. The nest contained three brown-speckled bluish eggs when the contents were first examined at 1230 on 21 May, and a fourth egg was in the nest at 1020 on 22 May. Assuming that the female laid one egg per day on four successive days, the first probably was laid on 19 May.

Incubation. Incubation is by the female alone (Mengel 1965, Potter 1973). Although the 1983 nest was discovered on 20 May, the female was first observed on the nest the morning of 21 May, which indicates that regular incubation began with the laying of the penultimate egg. Two eggs, apparently the third and fourth as they were on the high side of the nest, were pecked by a female Brown-headed Cowbird (*Molothrus ater*). The remaining two eggs, apparently the first and second, hatched on 2 and 3 June. This indicates an incubation period of 12 days (calculated from onset of regular daylight incubation to hatching of first egg), if incubation actually began on 21 May. The fact that the eggs hatched on successive days suggests that development of the embryos began on

the day of laying. Because the nest was tipped toward the southwest and was in full sun for good portions of each day, it is possible that sunlight provided enough warmth to induce early development. Another possibility is that the female sat on the nest at night prior to onset of regular daytime incubation. Such behavior has been noted in the Wood Thrush (Nolan 1974). Calculated from the presumed day of laying to day of hatching, the incubation period was 14 days.

In the early stages of incubation the female was a close sitter except during the warmest part of the day. She was very alert on the nest, moving her head to watch potential prey and predators, but she rarely changed positions once she settled on the eggs. Occasionally she gaped or preened. I never have seen a female Summer Tanager make any movements that I could interpret as turning the eggs. The first time I examined her eggs, the 1983 female peered down at me and raised her crown feathers while I positioned the step-stool, but she did not fly until I moved the limb supporting the nest. On 28 May she remained on the nest while three people conversed directly beneath it.

In cool or rainy weather as well as when the young were newly hatched, the female often flew directly from the nest to capture prey, swallowed it, and settled back on the eggs or young in less than a minute. The preferred position of the sitting bird was one that permitted a good view of a large open area and the prey flying through it. Foraging from the nest has been observed in other female Summer Tanagers (Potter 1973) and appears to be typical behavior. This may be the primary reason for the species' well-known habit of selecting nesting sites above roadways or adjacent to clearings.

Intervals of attentiveness and inattentiveness vary widely. Some females, such as the 1983 bird, remain off the nest so long that a casual observer might assume the nest had been abandoned. Others, like the 1968 bird, rarely stay off the nest as long as 5 minutes. Her daylight attentive periods varied from 10 minutes to nearly an hour, but she generally left the nest about every 20 minutes (Potter 1973). It should be noted that her nest was very well shaded, and her mate usually fed her promptly when she begged. He also drove her back to the nest if she stayed away too long.

The 1983 male was not seen sitting on the nest, not even during several nighttime visits. In the early stages of incubation he sang frequently but did not respond to the female's begging for food. He was first seen feeding her immediately after the nest was robbed by a cowbird on 27 May. Thereafter, he usually fed her if she begged persistently enough. These feedings frequently took place, as with other pairs, on a dead limb a few feet above the one holding the nest. Males apparently do not feed sitting females until after hatching. The 1983 male, like several others I have watched, often escorted his mate back to the nest, flying past the nest site in a conspicuous manner while she crept along the limb toward the nest; however, he rarely drove her toward the nest no matter how long she remained away from it. The 1968 male frequently drove his inattentive mate toward the nest, sometimes hovering over her until she settled on the eggs (Potter 1973).

Only once have I seen a male approach a nest closely before the first egg hatched. About 2 hours after the nest was robbed, the 1983 male came to the nest tree with food in his beak and called softly. Still calling, he moved toward the nest and approached so closely that I thought he was about to offer food to the eggs, but he did not do so and did not actually touch the nest, though he was only 2 or 3 inches from it.

Hatching. The older nestling hatched before 1805 on 2 June and the younger before 1000 on 3 June. The second egg was not pipped at 1805 on 2 June. Eggshells had been

removed prior to my first observation of each hatchling.

Feeding of nestlings. From 1000 to 1200 on 3 June, the female repeatedly begged for food and was ignored by the male. Although the male sometimes visited the nest tree, he did not approach the nest. About 1050 the female twice flew to the nest, looked into it, and called loudly. The male did not respond. At 1115 she fed one nestling, waited, poked her bill into the nest (apparently removing a fecal sac), settled on the nest, and swallowed. During a second period of observation from 1530 to 1700 on the same date, the pair seemed to be communicating better. At 1535 the female left the nest and very shortly captured two insects. The male then captured a dragonfly, killed it on a limb, and passed it to her in midair. She consumed the insect on the same limb where he had killed it. The pair moved about the yard together, and he escorted her back to the nest at 1600. She fed one nestling by regurgitation, then gradually moved away from the nest, calling loudly. She captured some prey, returned to the nest unescorted, peered into it, did not feed the young or clean the nest, and settled on her brood at 1609. At 1620 the female was off the nest, and both adults were in the nest tree. Both left briefly and returned. The female begged. The male captured prey and flew about with it in his bill, twice approaching the nest only to be chased away by the female. At 1644 she perched near the nest and he passed prey to her. Both went to the nest. He fed the older nestling by regurgitation. She ate the prey given her by the male and then fed the younger nestling. Both departed. Between 2000 and 2015 the female twice visited the nest and appeared to feed the young (light very poor). At 2015 the male came to the nest and fed her; she settled on the nest without passing food to the young.

Beginning on 4 June, the pair more or less took turns feeding the young; however, the male was often hesitant about approaching the nest. Several times he brought food to the nest and flew away without even attempting to feed the young. At least once he brought food to the nest and was unable to get the young to accept it. He apparently preferred to pass food to the female instead of feeding the young himself. Sometimes she called excitedly as he approached the nest, as if cheering him on. Occasionally the female visited the nest and only pretended to feed the young. Usually this performance stimulated the male to bring food to the nestlings.

The soft bodies of moths appear to be the preferred food for the newly hatched birds. At this stage the ground beneath favorite perches became littered with wings removed from prey. The afternoon of 4 June was the first time the parents were observed feeding whole small insects to a nestling, apparently the older one. On 9 June the male fed a small green caterpillar to one nestling, and on 10 June he provided a whole dragonfly, including wings. Very few prey items could be identified because the adults tended to arrive at the nest with the prey concealed within the mouth or crop.

Intervals between feedings are highly variable. They ranged from less than a minute to 24 minutes (average 10 minutes) for the 1968 pair and from 3 to 48 minutes (average 22 minutes) in 1983. The difference was not caused by the number of young, for both nests contained two offspring. Some of the very long intervals (44 and 48 minutes) may have resulted from the female's efforts to entice the male to feed her or the nestlings. At no time did any pair seem to have difficulty finding an adequate supply of suitable prey.

Brooding. The female brooded the young almost continuously from dusk through early morning, but frequently left the nest for long periods at midday even as early as 3 June. The morning of 10 June she left the nest at 0906, when the ambient temperature

reached 68°F. She was not seen brooding the young again until 2130. On 11 June she was not on the nest at 2025 or 2130. Apparently nighttime brooding ceased as soon as the older nestling was well feathered.

Nest sanitation. The cowbird that removed one egg from the nest cracked another. The next day the pecked egg was no longer in the nest. A broken and partly crushed Summer Tanager egg, apparently the remains of the one damaged by the cowbird, was found approximately 80 feet from the nest. Shells from the two eggs that hatched were not found, and the female is assumed to have eaten them or deposited the fragments far from the nest. In previous nestings (Potter 1973) shell fragments have been found directly under the nest and as far as 125 feet away. In no instance have I found enough fragments to account for all the eggs known to have hatched in the nest under observation. Both adults were seen picking up and swallowing fecal sacs until the young were capable of defecating over the side of the nest. After nest departure, examination revealed the interior to be free of feces. The outer wall of the cup had one white stain. A few bits of feather sheaths were matted into the nest lining, and the nest material was infested with mites.

Territory and nest defense. The tanagers regularly used about 2 acres of woods, and they occasionally flew over large portions of the adjacent fairway in pursuit of prey or intruders. In the early stages of incubation, the female tanager was amazingly tolerant of human visitors, and the male almost totally ignored both human and avian trespassers. After they had young in the nest, both adults usually attacked intruders vigorously, once almost striking me while I examined their nest. However, on warm afternoons when the female habitually left her nest unattended for lengthy feeding and preening sessions, I was able to examine the young at leisure as long as the parents were not alerted to my presence by the Brown Thrashers (*Toxostoma rufum*) that were nesting nearby. When the tanagers did harass me, they were joined on various occasions by Carolina Chickadees (*Parus carolinensis*), Tufted Titmice (*P. bicolor*), Solitary Vireos (*Vireo solitarius*), and Red-eyed Vireos (*V. olivaceus*) as well as the thrashers.

The female Brown-headed Cowbird robbed the nest at 1336 on 27 May. The female tanager had been off the nest for 6 minutes when the cowbird arrived in the nest tree with a flurry of wings. She moved quickly to the nest, pecked one egg, and then picked up another, which she carried to the ground beneath the nest tree and punctured cleanly with an oblong hole about 1/4 by 1/16 inch. The female tanager returned almost immediately and was soon joined by the male. She called loudly and constantly until she returned to the nest at 1345. On 29 May both tanagers chased a cowbird from the nest tree. It is not clear whether the pair defended the nest so well that the cowbird never could lay in it, which seems unlikely in view of their long inattentive periods, or the cowbird just decided not to parasitize the tanager nest. Perhaps the cowbird determined from the taste, odor, or texture of the punctured eggs that incubation had progressed too far for laying in the nest to be advantageous.

Although the tanagers became more diligent about nest defense after the cowbird episode, they still permitted other birds to perch in the nest tree from time to time. Only after the eggs hatched did the male show major concern about my presence 30 feet from the nest. Sometimes he perched in a tree directly above me and gave frequent alarm notes. Occasionally he dived upon me when I walked too near the nest. But most of the time I was accepted calmly—as long as I did not try to touch the nest.

Development and behavior of young. The young were examined in the nest or in hand daily from 2 June to fledging. The newly hatched birds had reddish skin and gray natal down. At 1620 on 3 June, the older nestling raised its head and permitted examination of the bill, which was mostly gray with yellow along the margins. No egg tooth was apparent. Skin was more pink than red. The thick, erect down on the crown gave the nestlings a bushy-headed appearance. The day-old nestling could raise its head high enough to be seen above the rim of the nest during feedings.

On 4 June both nestlings still had their eyes closed; the younger could raise its head above the rim of the nest; shoulders of the older could be seen during feedings.

On 5 June both nestlings still had their eyes closed; the older had blue-gray sheaths (about 1 inch long) showing prominently on the primaries.

On 8 June yellowish sheaths for the rectrices were emerging on the caudal tract of the older chick. The two birds half filled the nest cup.

On 9 June I examined the older nestling (now 7 days old) in hand and the younger closely in the nest. Both could open their eyes, but apparently kept them closed except when jostled. The younger bird's eyes were not fully open. On the older bird, sheaths were emerging on all feather tracts, including the anal ring (very tiny and yellow). Caudal sheaths that had been yellowish on 8 June were now dark gray, and tips of rectrices emerged from them. The upper mandible drooped at the tip. After one feeding, the older bird presented its anus above the rim of the nest for removal of the fecal sac, which the female swallowed before flying away. My shaking the nest elicited the same behavior. Both young moved about in the nest between feedings, but usually only their crowns could be seen. Late in the day both rested their chins on the downhill rim of the nest and gaped occasionally. When a violent wind rocked the nest, they withdrew their heads and crouched out of sight in the nest cup.

At 1940 on 10 June, I first noted droppings ($N = 3$) on the ground beneath the nest. Both young held shoulders well above the rim of the nest during feedings. Slight wing fluttering was first noticed.

On 11 June the older nestling called between feedings and held its head up without resting its chin on the rim of the nest. It preened and stretched its wings. Only a few wisps of natal down remained on the crown. A yellowish cast was apparent on the neck. The breast was white, streaked with brown. Yellow wing bars contrasted with dark brown wings. The bird occasionally leaned forward, lowering head and breast over the rim of the nest and lifting wings as if about to fly. When the 9-day-old bird was examined in hand, its chin, jugulum, thighs, back, and under wings were still mostly bare. The lower breast, though mostly white, had a yellowish cast. Wing feathers were dark brown with yellowish edgings. Sheaths had split on the rectrices, which were mostly yellow, about 0.5 inch long, and barely extended beyond the tip of the longest primary. The bill was medium gray, broadly bordered with yellow along margins. The triangular gray central portion of the upper mandible appeared sunken with the nostrils protruding. Legs were pale gray, but tips of the toes were yellowish. When I reached for it, the bird opened its bill and jabbed at my hand. It grasped the nest lining and called loudly when removed, but became silent when I allowed it to snuggle against my body. This action was soon regretted, for the bird was infested with mites. The younger nestling still wore a halo of gray natal down on the crown, and most of its feathers were at least partly sheathed. At

this time the pair of nestmates (8 and 9 days old) looked like those in the photograph by William G. Cobey at the top of page 355 in *Birds of the Carolinas* (Potter et al. 1980).

At 0900 on 12 June, the older nestling (10 days old) had already flown the nest and was perched about 5 feet above ground on a horizontal limb of a sapling growing beneath the nest tree. This bird now had brownish, buff-edged feathers on its back. The other nestling (9 days old) flew at 0950, when I checked to see if the nest was still occupied. The younger bird immediately hopped to the shelter of a rail fence. It still had sheaths on the bases of the primaries and some down on the crown, but it appeared to be ready to leave the nest. At 1200 I could hear both fledglings in the vicinity of the nest tree, but by late afternoon I could not locate them.

On 13 June I saw a female Summer Tanager feeding silently, high in the oaks, and on 16 June I saw a female accompanied by a young bird that flew well for a distance of at least 50 feet. My impression was that the pair tended their fledglings in the woods just beyond the spring. A male sang within the nesting territory as late as 22 June, and a female (presumably the one that had nested in the yard) was present on the same day. She gave a few begging calls before flying across the spring.

Vocalizations. The full, robin-like song appears to be given only by the adult male. Females and juveniles sometimes utter a *sotto voce* version of the song (Potter 1973). Mated pairs seem to use *pi-tuck* and *pit-i-tuck-i-tuck* in a casual, conversational manner, apparently just to keep in touch with each other. The nesting female frequently gives a *wherrie* begging call that ranges from barely audible to loudly insistent. She often gives this call softly while foraging for food and increases the volume as she pursues the male, particularly if he has food in his bill. Her most excited calls are accompanied by crouching and wing fluttering. The feeding male often gives a soft, low-pitched, slurred *chuurp* when he captures prey. This call is also used when the male flies from perch to perch with food in his bill. The male's alarm note is a sharp *pic*. Both the male and the female use *pit-i-tuck-i-tuck*, uttered loudly, rapidly, and insistently, in defending the nest and fledglings. The adults can utter all the sounds described above while holding food between the mandibles. Fledglings call in a *wherrie* that is more hoarse than that of the adult female, but the similarity is unmistakable.

HOW MANY BROODS?

Mengel (1965) suggests that Summer Tanagers are double-brooded. His egg data for Kentucky show completed clutches from 1 to 10 May and from 21 to 31 July, with a peak for first nestings from 21 to 31 May. A second peak is not evident. Mengel's strongest evidence for two nests in a season by the same pair is found in the following account:

On June 22, 1952, I saw a female begin construction of a nest 35 feet up in a large red oak in Levi Jackson State Park near London, Laurel County; she began the nest with a piece of white cleansing tissue, and several more of these were incorporated before the nest was completed on June 26. Incubation began on June 30 (3 or 4 eggs probably having been laid in the interim), and on this date one of the eggs was thrown unbroken to the ground in a severe storm. Incubation was still in progress when I left on July 2. It is not explicitly stated by Bent (1958) that the species is single-brooded, but this is implied. It is

therefore of interest that a male which showed every indication of being the mate of the female just discussed was feeding grown young in the territory on June 24, strongly suggesting that two nestings were undertaken by this pair. Nearby, another female was constructing an even later nest, one-third completed on July 2.

Burleigh (1958) does not mention the possibility of second broods, but his summary of nesting data suggests a nesting season long enough to accommodate them. He lists a nest with three slightly incubated eggs on 5 May and another with two incubated eggs on 22 June, as well as four young on 3 July.

In central North Carolina it is not uncommon to hear Summer Tanagers singing into late July. I have no proof that the two pairs that successfully reared young in my yard were either single-brooded or double-brooded. The 1968 pair was on territory the first week in May, but a nest was not discovered until 24 June. The first egg hatched on 2 July, and the male was first seen feeding young on 3 July. Because both of these birds were all red, I assumed no female was present and made no search for a nest in May. The 1968 male was more attentive to his mate and more regular in feeding the young than any of the other males I have observed. It is entirely possible that the late-June clutch was the second of the season and that this pair worked well together because of previous nesting experience.

In mid-June 1983 I twice observed behavior that suggests courtship. On 17 June a magenta-winged male Summer Tanager (apparently the one from a yard across the fairway from my home) gave alarm notes from the row of pines along a roadway leading to my yard. He pursued a female that had dark wing coverts and pure yellow under-tail coverts. Both birds called constantly, but no young were seen or heard. The male perched on a bare limb, cocked his tail, raised his crown feathers, and held the pose for at least a minute. He then began chasing the female as if trying to mount her; copulation was not seen. The same pair were in the same area the next day, but these birds were not seen thereafter.

On 23 June I saw a different pair of Summer Tanagers, apparently the ones that had just nested in my yard (female had red-tinged under-tail coverts), on a limb in the same row of pine trees. The male crouched in an incubating position amid a cluster of green and dried pine needles. The female watched him briefly and flew to a higher limb. The pair moved along the edge between my yard and the fairway, then cut through the yard and disappeared beyond the spring. After that date the male no longer sang in my yard. If the pair did produce a second brood, they did so in a different territory.

DISCUSSION

Of the six pairs of Summer Tanagers I have observed nesting in my yard, four have hatched eggs and two have fledged young. In both instances the successful females had mates that participated in nest defense and feeding of the young. In one instance where the eggs hatched but young were not raised to fledging, the male defended the nest and occasionally fed the female when she begged; however, he never was seen feeding the young.

The female Summer Tanager builds, incubates, and broods without assistance from the male. In fact, I have never seen a male touch the nest before hatching of the second

egg. Apparently the female must let her mate know that it is all right for him to feed the young. Both of the successful females apparently helped the male adjust to feeding young in the nest by taking food he gave them to the nestlings and feeding it to them while he watched. The 1968 male was far more attentive to his mate than was the 1983 male and had no difficulty feeding young. The 1983 male required a great deal of begging before he would feed the female and was very hesitant about approaching the nest. Sometimes the female gave me the impression that she really preferred for him to pass the food to her so she could feed the nestlings. At other times she seemed to be urging him to feed the young. In spite of her mixed signals, the male did a reasonably good job of providing food for the offspring.

Although a female Summer Tanager should have no difficulty providing sufficient food for herself and a brood of two to four young, she appears to be dependent upon the cooperation of the male. Indeed, the male's willingness and ability to participate in the care of the young may be essential to reproductive success for the species.

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North Carolina State Museum of Natural History, Box 27647, Raleigh, N.C. 27611



Roundtable

... with Louis C. Fink

Is the Gentle Bluebird Actually a Killer?

The Eastern Bluebird (*Sialia sialis*), symbol of happiness and domesticity, could also be a killer. I began to wonder back on 2 June 1981, when I found the corpse of a male beneath one of the houses on my trail here at Raleigh. The bird, a male, had not been dead more than 24 hours. The left flank was mangled and bloody. My first reaction was to suspect that some urchin with a BB gun had made a target of my bluebird—the house was hard by a rural dirt road. But when I noted that a pair of bluebirds were still in possession of the house, which contained the first of five eggs, I began to suspect that the dead bird might have been an intruder done to death by the rightful owner. Or perhaps a usurper had won the day.

On 14 April 1985, I found another dead male with blood still oozing from a wound beneath the unfortunate bird's left wing. The house where the second bird was found is behind a fence in an experimental garden, a place not overly accessible to BB-slinging hunters. A pair of bluebirds were on guard at the house, which contained a newly built nest.

Recently I read Patricia A. Gowaty's article "Bluebird Belligerence," which appeared in the June 1985 issue of *Natural History*. She presents evidence that bluebirds, both male and female, defend territories, sometimes to the death, especially when the females have a go at each other. Territorial fights, moreover, are apt to be most fierce during nest construction or the laying of eggs, a time when the male might be effectively cuckolded, or other females might dump eggs in the nest. I am just about convinced that the two casualties I have noted were either males that were killed while attempting to usurp territories, or males that were unable to defend their chosen ground, perhaps one of each. Has anyone else noted any such casualties along a bluebird trail?—JOSHUA A. LEE, 5104 Newcastle Road, Raleigh, N.C. 27650.

Golden Anniversary

Carolina Bird Club will celebrate its 50th anniversary in 1987. The editors of *The Chat* plan to mark the occasion with some special features about the history of the club. Anyone who would like to share memories and old photographs is invited to contribute to the four issues in Volume 50. Biographical sketches of past presidents of the club and former editors of *The Chat* will be appreciated. Please send items for publication to Eloise Potter, North Carolina State Museum of Natural History, P.O. Box 27647, Raleigh, N.C. 27611.

Backyard Birding

... with Gail T. Whitehurst

Albino Roundup

Although nearly every experienced bird watcher has seen at least one albinistic bird, the sight of one in abnormally white plumage is always startling. Because of their striking appearance, a large number of albinistic birds are contributed to the scientific collections of museums. C. Chandler Ross (*Cassinia* 47:2-21) surveyed museum collections, including those of The Charleston Museum, and a good portion of the periodical literature to determine the extent of albinism in North American bird species.

Ross found no evidence of albinism in 22 avian families, most of these represented by only one species nesting in the region covered by the study. He found more albinism among waterfowl, game birds, blackbirds, and finches than in any other large families. Species having a large proportion of black in their plumage are most likely to exhibit albinism, and the American Robin far exceeds any other North American species in the number of albinos recorded. Ross considers albinism to be extremely rare among owls, hummingbirds, wrens, and titmice.

A letter from Helmut C. Mueller dated 26 October 1982 describes a Ruby-throated Hummingbird, or possibly two different individuals, seen at his feeder in Chapel Hill, N.C., during the summers of 1981 and 1982 for only a few days at a time. The entire head, including nape, was white; otherwise the bird was a normal "female." Ross found one specimen that was almost completely white and two published records of partial albinos.

Ces Loveless of Tryon, N.C., photographed an aberrant Purple Finch that appeared at a feeder at his former home in Huntington, Long Island, New York, during the winter of 1973. This bird was white where an adult male usually is purple, but the brown portions of the plumage appeared to be normal. Ross found a pure white specimen and a partial albino recorded by Ruthven Deane, who wrote three papers (1876, 1879, 1880) on albinism for the *Bulletin of the Nuttall Ornithological Club*.

Twice in the past 19 winters Gladys Baker and I have shared a white-headed White-throated Sparrow that moved back and forth between our feeders. The birds appeared normal except for large white patches on the crown, nape, and cheek. Ross reports five specimens and six other records of partial albinos.

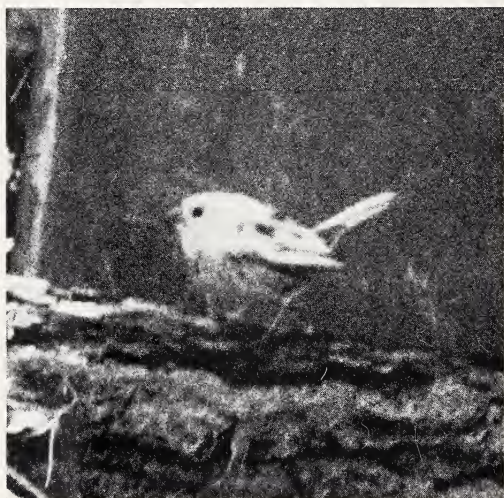
David Chamberlain of Mount Pleasant, S.C., photographed a partially albinistic Song Sparrow at the Stono Marina, John's Island, S.C., in March 1984. First noticed by Eddie Odum, the bird was very active and generally found in the company of other Song

Sparrows in normal plumage. Ross found nine specimens, all partial albinos. Additionally, there were two sight records of birds having only one or two normal feathers.

About 20 years ago, a flock of House Sparrows that frequented the parking lot of a drive-in restaurant in Raleigh, N.C., exhibited a great deal of albinism. Almost all of the birds were abnormally pale in small patches, and at least one was dingy gray nearly all over. I suspect that some of these birds would have been strikingly white if not discolored by city grime. Zebulon used to have a very white House Sparrow, apparently a total albino, that occasionally startled me by flying across the street in front of my car. Ross found nine specimens and 46 published records representing 10 total albinos and 45 partial albinos.

Four degrees of albinism are generally recognized by ornithologists. A *total albino* has pigment completely absent from plumage, irides, and skin. An *incomplete albino* has pigment completely absent from the plumage, or irides, or skin, but not from all three. An *imperfect albino* has pigment reduced (diluted) in any or all three areas, but never completely absent. A *partial albino* has pigment completely or partially absent from parts of any or all three areas. Partial albinism is by far the commonest form. Albinism may be inherited, or it may develop in an individual bird as a result of a physiological disturbance.

Documenting plumage abnormalities in wild birds is one way amateurs can contribute to ornithology. Among the Carolina birds not on Ross's list of 232 North American species showing albinism are Brown Pelican, Anhinga, American Oystercatcher, Black Skimmer, Chuck-will's-widow, Red-cockaded Woodpecker, Carolina Chickadee, Brown-headed Nuthatch, Ruby-crowned Kinglet, Brown Creeper, Red-eyed Vireo, Black-and-white Warbler, Pine Warbler, Prairie Warbler, Black-throated Blue Warbler, Hooded Warbler, Orchard Oriole, and Blue Grosbeak. If you see an albinistic bird, be sure to note the eye, bill, and leg color as well as the feather characteristics.—ELOISE F. POTTER, North Carolina State Museum of Natural History, P.O. Box 27647, Raleigh, N.C. 27611.



A partial albino Song Sparrow was at the Stono Marina, John's Island, S.C., in March 1984. (Photo by David Chamberlain)

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Piping Plovers Nesting at Cape Hatteras, N.C.

W. WALKER GOLDER

Department of Biological Sciences
University of North Carolina at Wilmington
Wilmington, N.C. 28403

Increasing concern is being expressed about the status of the Piping Plover (*Charadris melodus*) in North America. It was, for example, Blue Listed in *American Birds* in 1982 (Tate and Tate 1982) and is the subject of considerable concern by the U.S. Fish and Wildlife Service. The status of the Piping Plover in North Carolina is apparently primarily that of a winter resident species that nests sparingly along the barrier islands from Pea Island to Morehead City (Potter et al. 1980). *Birds of North Carolina* (Pearson et al. 1959) indicated that the species was a casual summer resident at Pea Island, with nests found in 1901 and 1902.

There were apparently no nests located in North Carolina between 1902 and 1960, when a young bird was photographed in early June at Ocracoke (Hespenheide 1961). The next report was of a chick at Shackleford Banks in 1970 (Quay et al. 1970), and in 1977 a nest was found by Ricky Davis on Core Banks (LeGrand 1977). In 1983 P.J. Crutchfield documented an isolated breeding site at Sunset Beach, Brunswick County, N.C. (LeGrand 1984), apparently the southernmost nests in North America.

I spent the summer of 1984 working with nesting colonial waterbirds in the Cape Hatteras National Seashore. While monitoring the activities of nesting gulls, terns, and skimmers, I located four Piping Plover nests and one additional brood of young that had already left the nest by the time of their discovery.

The first Piping Plover nest was found on 18 May on Cape Point (see front cover). This nest contained four eggs and was on an open, sandy flat adjacent to the ocean. On 5 June the eggs appeared to have hatched, but the adults and young could not be found in the immediate area. The adults and two young were observed on 12 June. The adults and young were seen in the vicinity of the nesting site throughout the summer, and the two young apparently fledged successfully.

The second Piping Plover nest was found on 27 May, also at Cape Point. This nest contained two eggs and was in an area of low, sandy flats. This nest was destroyed by flooding following very heavy rains on 30 May and 31 May. Following the loss of the

nest, the adults appeared to be renesting in the same spot but then abandoned nest building.

The third nest, which may have been constructed by the same pair that failed at nest number two, was located at Cape Point on 15 June. This nest contained two eggs on 15 June; a third egg was deposited between 15 and 17 June. On 11 July two of the three eggs hatched. The third egg hatched on 12 July, and all three young left the nest on that day. The adults and young remained in the general area throughout the summer, and all chicks apparently fledged.

The fourth nest was approximately 0.3 mile N of Hatteras Inlet. The habitat was very similar to that at Cape Point. This nest, containing four eggs, was found on 27 June. When the nest was checked on 10 July, four eggs were present, but on 11 July only one egg remained in the nest. Although actions of the adults indicated that young were nearby, they could not be found in the immediate area.

On 30 June two Piping Plover chicks and two adults were feeding in a marsh flat approximately 1 mile N of Hatteras Inlet. The young appeared to be at least 1 week old. A single chick was in this same area on 8 July. After this sighting the young were not seen again.

The habitat in which all Piping Plovers nested was very similar to that used by nesting Least Terns (*Sterna albifrons*). All four nests were adjacent to, or on the fringes of, Least Tern colonies. Both the Hatteras and Cape Point sites were very wide, open, sandy flats that were bordered on one side by the Atlantic Ocean and were adjacent to low-lying sand flats. The sand flats were used extensively by the Piping Plovers for feeding.

The Piping Plover nests were very distinctive and easy to separate from those of the Least Tern. Plover nests were on the open sand and were lined with small, light-colored shell chips. There was no vegetation present in the immediate vicinity of any nest. The eggs were similar in size and color to the Least Tern eggs but were more oval and more finely speckled.

This work was made possible by assistance from The Cape Hatteras National Seashore and The University of North Carolina at Wilmington.

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First *Buteo jamaicensis kriderii* Collected in South Carolina

WILLIAM POST
Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

ROXIE C. LAYBOURNE
Division of Birds
Smithsonian Institution
Washington, D.C. 20560

The pale western form of the Red-tailed Hawk, known as "Krider's" (*Buteo jamaicensis kriderii*; A.O.U. Checklist, 1957) was admitted to the South Carolina avifauna on the basis of a specimen seen in South Carolina, but collected in Georgia (Murphey, Observations on the Bird Life of the Middle Savannah Valley, 1937; Sprunt and Chamberlain, South Carolina Birdlife, 1949). The identity of this individual (ChM 2368) was apparently never confirmed by comparison with a series of specimens. Laybourne has now examined the skin and has confirmed the identity.

The second South Carolina sighting of *B. j. kriderii* was made by J.H. Dick in December 1952 at Dixie Plantation, Meggett, Charleston County. An excessively pale individual, probably the same bird, was seen at the edge of the same corn field each winter until 1967. Alexander Sprunt Jr. also saw this bird (unpubl. data, Charleston Museum files).

The third record for the state, and the first specimen actually collected there, is an immature female (ChM 2369) taken on 12 December 1978. It was apparently disabled by a vehicle along Hwy 61 near Middleton Gardens, Charleston County. Sally H. Murphy of the South Carolina Wildlife and Marine Resources Department captured it alive, but it died in captivity on 4 January 1979, whereupon it was placed in the freezer of the Charleston Museum. The specimen was prepared as a study skin by Post on 5 March 1983. The bird was very emaciated when it died (840 g), and it had had its right leg amputated about 2.5 cm below the heel.

We appreciate the contribution that Sally H. Murphy has made in salvaging this specimen.

Probable Rufous Hummingbird in Inland South Carolina

HARRY E. LeGRAND JR.
331 Yadkin Drive
Raleigh, N.C. 27609

In late October 1977, Pamela Spencer called and informed me that she had a female or immature Rufous Hummingbird (*Selasphorus rufus*) at hummingbird feeders at her home several miles east of Pendleton, Anderson County, S.C. Because the bird visited the feeders only briefly during a given day, I decided not to attempt to see the bird at that time. I received secondhand word in mid-November that the hummingbird was still present, so I visited Mrs. Spencer's home on 14 and 15 November. Sidney Gauthreaux accompanied me on the latter date. I had little trouble observing the hummingbird on the two dates.

The bird was clearly not a Ruby-throated Hummingbird (*Archilochus colubris*), because it had distinctive light rusty sides and belly. The basal portion of the rectrices was rufous in color. Gauthreaux and I were aware of the remote possibility of Allen's

Hummingbird (*S. sasin*), which has never been recorded east of Louisiana. Allen's is practically identical to Rufous in female or immature plumage, except for narrower and more sharply pointed outer tail feathers than on Rufous. The outer tail feathers seemed the same size and shape as most other rectrices and did not appear slender.

The hummingbird was first noted by Mrs. Spencer on 20 October, but the last date observed is not known. It seems highly likely that the bird was indeed a Rufous, and there are a large number of confirmed records for this species in the eastern United States (Conway and Drennan, *Amer. Birds* 33:130-132, 1979). Nonetheless, it is best to call the bird a "probable Rufous Hummingbird."

The only confirmed Rufous for the Carolinas is a specimen from Charleston, S.C., on 18 December 1909 (Auk 46:237-238). Sight records of probable Rufous—clearly *Selasphorus* as opposed to *Archilochus*—are from Raleigh, N.C., 2 to 5 November 1976 (Hader and Howard, *Chat* 41:70-71); Charleston on 24 January 1981 (*Chat* 45:81); and two birds near Hayesville, N.C., from 17 October to 11 December 1981 (unpublished). All records for the Carolinas involve females or immatures. The two birds at Hayesville were photographed; full descriptions of the birds plus the photos have been sent to the North Carolina State Museum of Natural History, but the descriptions or photos have not yet been published.

Certainly, anyone who observes a hummingbird in the Carolinas with rusty color on the sides, belly, or tail should write a detailed account for the General Field Notes in *Chat*. Much remains to be learned about the identities of hummingbirds not in adult male plumage, and the Rufous is not yet on the Official List for North Carolina.

Cavity Tree Killed by Red-cockaded Woodpeckers

JEROME A. JACKSON

Department of Biological Sciences

Mississippi State University

Mississippi State, Mississippi 39762

The Red-cockaded Woodpecker (*Picoides borealis*) is known for its obligate use of living pines as cavity trees and for its excavation of resin wells and a plate around the cavity entrance (Wayne 1910, Ligon 1970, Jackson and Thompson 1971). Resin wells are maintained by the birds, which results in a continuous flow of pine gum that can deter climbing Rat Snakes (*Elaphe obsoleta*; Jackson 1974). The plate is an area that is chipped through the cambium around the cavity entrance. Creation of the plate results in additional gum flow, but maintenance of the plate removes dried gum and keeps it from blocking the cavity entrance. With continued use of the cavity, the plate frequently becomes a bare circle of 20 cm diameter or larger. In a typical cavity tree, about 75 years old for Loblolly Pines (*Pinus taeda*; Jackson et al. 1979), excavation of such a plate does not obviously affect the survival of the tree. Mean diameter at cavity height for 100 Loblolly Pines (mean age = 76.1 years) on Noxubee National Wildlife Refuge, Mississippi, was 39.4 ± 5.3 cm. One might predict that woodpecker cavity, resin well, and plate excavation would have a significant impact on the physiology of smaller trees. I report here the death of a 55-year old Loblolly Pine cavity tree following enlargement of the plate by Red-cockaded Woodpeckers to girdle the tree.

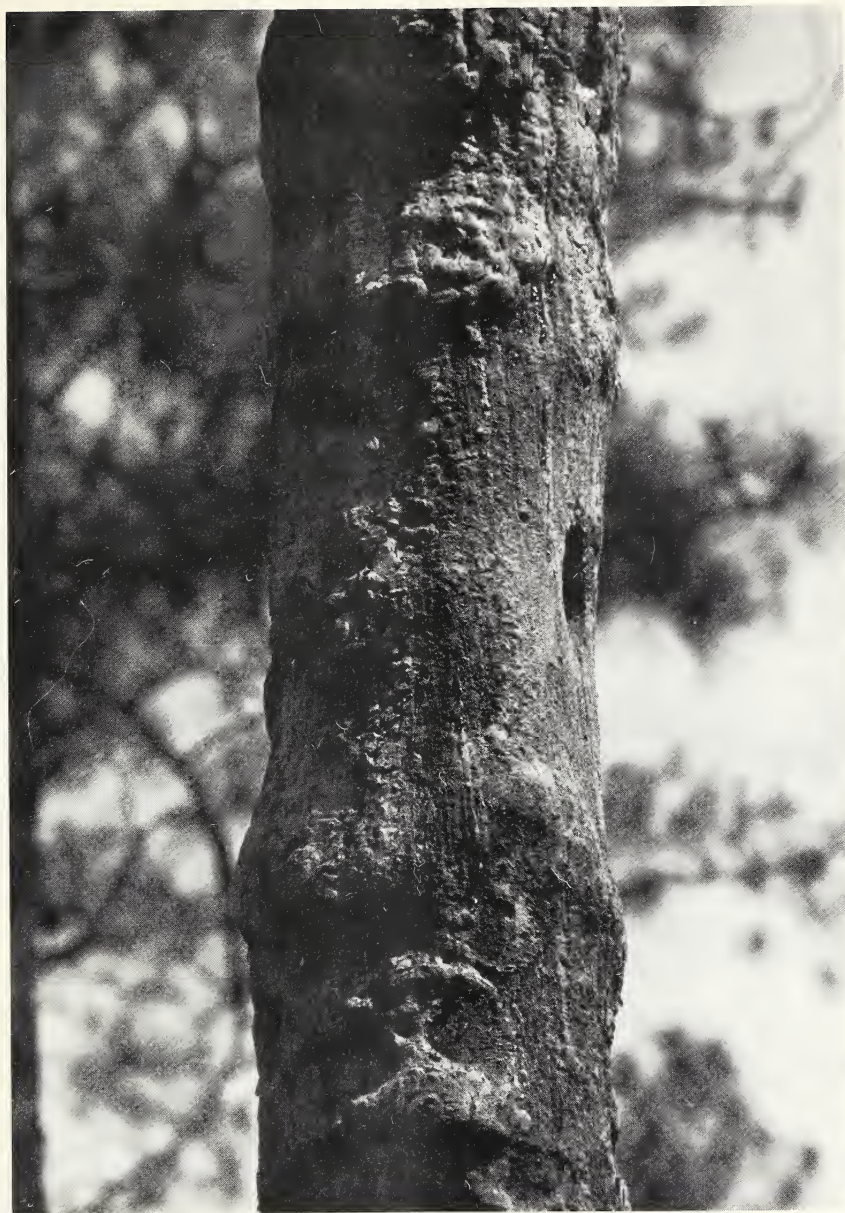


FIG. 1. A 55-year-old Loblolly Pine in Aiken County, S.C., was girdled and killed following enlargement of the plate around a nest cavity by Red-cockaded Woodpeckers. This may explain the species' preference for cavity trees that are more than 70 years old and thus large enough to reduce the possibility of girdling. (Photo by J.A. Jackson)

The tree, on the Savannah River Plant, in Aiken County, South Carolina, had been in active use by Red-cockaded Woodpeckers for at least 2 years when I began monitoring it in 1978. I found two active cavities in the tree, one at 2.4 m and one at 6.1 m. Diameter at breast height was 28 cm, and at cavity height 25 and 22 cm, respectively. In 1978 the plate was about 8 cm in diameter at both cavities. As the plates were enlarged, gum flow was reduced; therefore the birds chipped more and more at both the plates and resin wells. By January 1982, only about 5 cm of cambium was left intact on the trunk opposite the lower cavity and about 7 cm was left opposite the upper cavity. Gum flow had stopped, and the tree was dying. The woodpeckers continued to chip at the plates until May 1982, when the tree was dead, girdled at the lower cavity (Fig. 1), and left with about 2 cm of cambium at the upper cavity. Southern Flying Squirrels (*Glaucomys volans*) then usurped both cavities, but the birds continued to use other trees in the colony.

Two dead Red-cockaded Woodpecker cavity trees found in Noxubee County, Mississippi, and Jefferson County, Alabama, in 1974 and 1977, appeared to have met a similar fate. Both Loblolly Pines were dead when found, and I could not determine whether girdling occurred before or after death. Although neither could be aged, both were small for Red-cockaded Woodpecker cavity trees (dbh 31 and 27 cm). Larger potential cavity trees were not present at either site.

Disease, insects, or crowding may have contributed to the death of the South Carolina tree; but I saw no evidence of such factors, and the ultimate cause of death was likely girdling by the birds. The increased likelihood of girdling in young trees may be a reason for this species' preference for older pines for cavity excavation. Excessive gum flow in younger trees (Jackson 1978) and, possibly, a need for red heart fungus (*Phellinus pini*) damage (Jackson 1977) are among other factors that may also favor choice of older trees for cavity excavation.

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Status of Three Colonies of Red-cockaded Woodpeckers at Pee Dee National Wildlife Refuge, Anson County, N.C.

DOUGLAS B. McNAIR

Route 1, Box 324

Dan Ross Road

Six Mile, S.C. 29682

Red-cockaded Woodpeckers (*Picoides borealis*) are scarce in the piedmont of the Carolinas. Several piedmont nesting localities have been reported in recent years, including Pee Dee National Wildlife Refuge in Anson County, N.C. (Potter et al. 1980). The purpose of this paper is to provide information on the status of several colonies at Pee Dee National Wildlife Refuge.

Red-cockaded Woodpeckers are or were inhabiting three colonies. Colonies 1 and 3 are near the junction of SR 1634 and 1627. Colony 2 is near refuge headquarters. All three are in mature mesic pine forest with a well-developed understory and midstory dominated by Sweetgum (*Liquidambar styraciflua*), oaks (*Quercus* sp.), hickories (*Carya* sp.), dogwoods (*Cornus* sp.), and Red Maple (*Acer rubrum*). Colonies 1 and 3 are on land with minimal relief; Colony 2 is on undulating land with a maximum relief of 6 m.

Cavity trees in the three colonies are almost all Loblolly Pines (*Pinus taeda*). The only exceptions are one Longleaf Pine (*P. palustris*) in Colony 1 and one Shortleaf Pine (*P. echinata*) in Colony 2. Diameter at breast height, height, and age of the cavity trees were measured by several foresters directing the Youth Conservation Corps summer program and by refuge personnel. No data were collected prior to 1977; age of the trees is updated to the year 1985. Almost all cavity trees were measured for the three variables. The exceptions are a tree that was dead when discovered in Colony 2 and the 243-year-old Longleaf Pine, which died in 1983 in Colony 1. Diameter, height, and age of the cavity trees (Tables 1-3) generally agree with these measurements from throughout the Red-cockaded Woodpecker's range except in southern Florida (see Table 1 in Shapiro 1983).

Compass directions of cavities and start holes were designated into four compass categories: north (316°-45°), south (136°-225°), east (46°-135°), and west (226°-315°).

TABLE 1. Diameter at breast height (in cm) of Red-cockaded Woodpecker cavity trees at Pee Dee N.W.R., Anson County, N.C.

	COLONY 1 (N = 12)	COLONY 2 (N = 43)	COLONY 3 (N = 10)
mean	49.1	43.2	38.3
S.D.	7.5	7.6	5.9
range	34.5-62.7	29.5-59.4	28.4-46.2

TABLE 2. Height (in m) of Red-cockaded Woodpecker cavity trees at Pee Dee N.W.R., Anson County, N.C.

	COLONY 1 (N = 12)	COLONY 2 (N = 43)	COLONY 3 (N = 10)
mean	24.5	22.7	25.0
S.D.	2.3	3.6	3.1
range	18.3-26.8	16.8-33.2	20.1-27.8

TABLE 3. Age in 1985 of Red-cockaded Woodpecker cavity trees at Pee Dee N.W.R., Anson County, N.C.

	COLONY 1 (N = 11)	COLONY 2 (N = 43)	COLONY 3 (N = 10)
mean	104.1	87.9	82.4
S.D.	18.7	14.5	23.5
range	72-123	57-122	50-115

Not all cavities and start holes were measured in cavity trees in the three colonies, but the total number (N = 155) measured is the majority of cavities and start holes present (Table 4). Cavities and start holes were oriented in a predominantly western direction, which is consistent with orientation data found elsewhere in the Red-cockaded Woodpecker's range (Shapiro 1983 and references therein).

A brief history of each colony is given below.

Colony 1. This colony was discovered in the summer of 1973. G.A. Carowan Jr. reported fresh pitch streaks present on 12 October 1974, but he found no birds. Refuge personnel found only old pitch streaks in late spring of 1979 and believed the colony was abandoned. No evidence of activity was reported from 1980 to 1984. There are 12 cavity trees in this colony.

Colony 2. This colony was discovered in 1977. Refuge personnel found a pair nesting in 1979 (tree 25) and in a different tree in 1980 and 1981 (tree 1). These nest trees are close together (64 m apart). Adults were observed entering the nest cavities to feed calling young. Both nest cavities face southwest and are 12.2 m high. Estimates of adults present each year were five from 1979 to 1981. From 1982 to 1984, no adults nested, and the number of birds declined to three by 1984. In 1982 and 1983, fresh plates and resin wells were found at cavities (trees 1, 23, and 43), but no fresh work was found in 1984 except for start holes at three other trees. There are 44 cavity trees in this colony.

Presently, all the cavities in tree 1 have been enlarged by Pileated Woodpeckers (*Drycopus pileatus*). The cavity in tree 25 is no longer active for it has been enlarged by Pileated Woodpeckers. Cavities in trees 23 and 43 had not been enlarged through 1984. Tree 19, with two fairly recent start holes at 7.7 and 15 m, was used by breeding Northern Flickers (*Colaptes auratus*) in 1979 and possibly afterwards. Flickers also

TABLE 4. Compass directions of cavities and start holes in Red-cockaded Woodpecker trees at Pee Dee N.W.R., Anson County, N.C.

	N	S	E	W	TOTAL
Colony 1	12	11	6	36	65
Colony 2	19	6	9	34	68
Colony 3	<u>5</u>	<u>5</u>	<u>7</u>	<u>5</u>	<u>22</u>
Total	36	22	22	75	155
Percent	23	14	14	48	

nested in an enlarged old Red-cockaded Woodpecker cavity in tree 3 in 1983, and Wood Duck (*Aix sponsa*) eggshells were found at the base of the same tree. Six more roost trees, used in 1978 and 1979, are no longer active.

It is conjecture whether or not more than one clan formerly occupied the area of Colony 2. The number of cavity trees (44) and their grouping in relation to habitat, relief, distance, and total area suggest two clans may have formerly been present. Research methods capable of delimiting contiguous colonies are beyond the scope of the present study.

Colony 3. This cavity was discovered on 15 May 1978 when refuge personnel saw one Red-cockaded Woodpecker and found one cavity tree. They found a nest in tree 2 in 1979, found nesting activity but no specific nest in 1980, and found a nest in tree 1 in 1981. These cavity trees are close together (41.5 m apart). Adults were observed entering the nest cavities to feed calling young both years. The nest cavity in tree 1 faces south and in tree 2 faces east. Both nest cavities are 7.7 m high. Estimates of adults present each year were four from 1979 to 1981. From 1982 to 1984, no adults nested, and the number of birds declined to 2 by 1984. Fresh plates and resin wells were found at cavities in trees 1 and 10 in 1983 and 1984. Tree 2 is no longer active, for the former nest cavity and all other cavities or start holes have been enlarged by Pileated Woodpeckers. The same enlargement has also occurred at trees 4 and 6, the only other likely future cavity trees. Trees 1 and 6 were used as roosts through at least 1981. There are 10 cavity trees in this colony.

The YCC cleared brush and hardwoods from the immediate vicinity of each cavity tree in all three colonies during several years from 1977 to 1982. In addition, Colonies 2 and 3 were burned in 1978 and 1981 to control hardwoods. This clearing and burning has not deterred Pileated Woodpeckers and Red-bellied Woodpeckers (*Melanerpes carolinus*), as well as other species, from continuing to enlarge Red-cockaded Woodpecker cavities and start holes. Of 61 cavity trees checked, Pileated Woodpeckers have enlarged 35 (57%). Six other cavity trees enlarged by other woodpeckers account for a total of 67% enlarged by woodpeckers. All 12 cavity trees in abandoned Colony 1 have been enlarged by woodpeckers, 11 by Pileated Woodpeckers. Half of the cavity trees in Colony 3 and 61% in Colony 2 have been enlarged by woodpeckers. At both of the two active colonies, enlargement continues to occur on several of the few remaining

trees suitable for nesting, including former nest trees. This encroachment by Pileateds and other woodpeckers has often been associated with cavity trees that are near bottomland habitats. Colony 2 is adjacent to hardwood stream-river bottoms, and both Colonies 2 and 3 are surrounded by mature mesic forest.

Many mature pines, primarily Loblolly, occur at each of the three colonies, and have dbh, height, and age characteristics similar to those of the cavity trees (Tables 1-3). Small cleared areas around cavity trees have not prevented competition by Pileateds and other woodpeckers, and these species have usurped Red-cockaded Woodpecker use at many cavity trees. Consequently, all hardwood brush, sawtimber, and pulpwood were removed in 1984 at all three colonies. In addition, pine sawtimber and pulpwood were removed in 1984, and the basal area of pine was reduced to 21.4 to 24.4 m² as recommended in the Red-cockaded Woodpecker Recovery Plan. Future plans entail continued control of hardwoods by removal and by summer burning (after mid-July). It is hoped that proper management of habitat for the Red-cockaded Woodpecker will alleviate woodpecker competition at cavity trees and allow reuse of pines or use of new pine trees by the few remaining Red-cockaded Woodpeckers.

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Heterospecific Vocal Mimicry by Blue-gray Gnatcatchers

DOUGLAS B. McNAIR

Route 1, Box 324

Dan Ross Road

Six Mile, S.C. 29682

Bent (1949) quoted Pickens who stated that the Blue-gray Gnatcatcher (*Poliophtila caerulea*) has "decided powers of mimicry," imitates in "almost whispering tones," and may be called the "Little Mockingbird." Fehon (1955) stated "Gnatcatchers are good mimics and the notes of ten other species were recognized." Root (1969) did not state that the Blue-gray Gnatcatcher mimics but mentioned its territorial song, which is sometimes whispered, included "long rambling series of warbles, whistles, and calls which are commonly assumed to function as the Gnatcatcher's song." Root noted this whispered song is associated with courtship activities. Kroodsma and Baylis (1982) did not list the Blue-gray Gnatcatcher as a heterospecific vocal mimic in their comprehensive

review on vocal learning in birds, apparently because the accounts in Bent (1949) and Fehon (1955) were overlooked and unsupported by other evidence.

I have qualitative incidental observations of heterospecific vocal mimicry by Blue-gray Gnatcatchers from three states, Massachusetts, North Carolina, and South Carolina, with some details from the last state. Two pairs in 1982 and 1983 and one pair in 1984 had their territories in at least some portion of my yard in Six Mile, Pickens County, S.C. My yard was the center of one territory in each of the 3 years. On arrival in late March, males sang and established and patrolled their territories, often accompanied by their females as described by Root (1969). Song was delivered from many conspicuous and inconspicuous perches, most frequently from middle heights (3-9 m) in both deciduous and coniferous trees and adjacent open woodlands in upland habitat. The territorial song usually consisted of short, sibilant phrases and thin, wiry notes and was sung at normal volume or *sotto voce*. Singing bouts usually lasted 10 seconds to 5 minutes; brief bouts are much more common as males frequently shifted perches in the same tree or flew to different trees while patrolling territories (Root 1969). Song occasionally occurred during undulating flights between trees or shrubs. Territorial song declined in frequency once incubation began, as reported by Fehon (1955) and Root (1969).

The mimic territorial song of the Blue-gray Gnatcatcher occurred under the same circumstances as above, and consisted of territorial and nonterritorial songs and calls of other species incorporated in the gnatcatcher's song. Each mimetic element (i.e. song, part thereof, or call) was usually sung once without repetition. Mimetic elements may be sung consecutively with very brief pauses between elements, though elements of the gnatcatcher's own song or calls were always interspersed in the mimicked version of the territorial song. The tonal quality of the mimicked notes usually was not comparable to the model, but I have recognized mimicry of about 30 species that are sympatric with the Blue-gray Gnatcatcher. Examples of songs and calls mimicked, following the terminology of Terres (1980), were the "wheeeep" call of the Great Crested Flycatcher (*Myiarchus crinitus*), the "tea-kettle" element of the song of the Carolina Wren (*Thryothorus ludovicianus*), the "mew" call of the Gray Catbird (*Dumetella carolinensis*), and elements from the song of the American Goldfinch (*Carduelis tristis*). The mimic territorial song was given throughout the day, but was most frequent from 30 minutes before sunrise to 90 minutes after sunrise. This is similar to the timing of whispered territorial song described by Root (1969). During the hour before sunrise and occasionally afterwards, gnatcatchers often sang completely hidden from view within a tree; in particular, individuals often sang *sotto voce* from within a 5-m Red Cedar (*Juniperus virginiana*).

Neighboring pairs or threesomes (two males and a female) often interacted as a loose group during courtship periods. Intraspecific agonistic interactions observed among males were countersinging and displacement of one male by another. Bouts of countersinging did involve use of the mimic territorial song. Both of the above behavioral patterns were also seen in a group of five birds (three males, two females) in deciduous and Red Cedar scrub on 19 March 1984 in Charleston County, S.C. The breeding status of these birds was unknown.

The qualitative evidence cited herein suggests that heterospecific vocal mimicry in the Blue-gray Gnatcatcher functions intraspecifically. Mimicry was most intense during the courtship period when males patrolled prospective or established territories and when

females frequently followed males. Countersinging and physical displacement among males was also most frequent during this period, as reported by Fehon (1955). I suggest that these behavior patterns are related to mate choice and intrasexual competition among males, both attributes of sexual selection. No other correlations with mimicry, either ecological or behavioral, could be discerned.

In summary, my observations of heterospecific vocal mimicry in the territorial song of Blue-gray Gnatcatchers support Bent's (1949) quotation of Pickens and the observations of Fehon (1955), are consistent with singing behavior described by Root (1969), and indicate that mimicry is widespread and "persistent" (i.e. most or all individuals probably mimic regularly; Baylis 1982).

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BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates fall 1984 and winter 1984-1985)

RED-THROATED LOON: Rare in inland North Carolina were individuals seen on 9 December at Jordan Lake (Ricky Davis, Harry LeGrand, Wayne Irvin), on 10 December on Lake Norman in Lincoln County (Heathy Walker, Harriet Whitsett), and on 1 January at Roanoke Rapids Lake (Merrill and Karen Lynch).

NORTHERN FULMAR: The first in winter for North Carolina was one observed off Oregon Inlet on 21 February by Dave Lee and Derb Carter.

GREATER SHEARWATER: Dave Lee collected a very late bird off Oregon Inlet on 12 December.

MANX SHEARWATER: Very rare, though now expected in winter, were two seen on a pelagic trip off Oregon Inlet on 20 December by Dave Lee.

AMERICAN WHITE PELICAN: Ray Winstead saw one flying over the surf at Atlantic Beach, N.C., on 16 December.

GREAT CORMORANT: This coastal species was relatively far inland at Middleton Gardens near Charleston, S.C., on 12 January (many observers). Very unusual in the Carolinas was an adult seen at Huntington Beach State Park, S.C., on 2 February by Perry Nugent and party.

LEAST BITTERN: Ricky Davis flushed one from a pond margin at Hatteras, N.C., on 27 December.

FULVOUS WHISTLING-DUCK: One was shot at an impoundment near Otway, Carteret County, N.C., on 17 December (fide Ted Best).

SNOW GOOSE: One white-phase goose was at Lake Cammack near Burlington, N.C., on 27 January (Allen Bryan); and a blue phase goose was near Southern Pines, N.C., on 24 January (Dick Thomas).

ROSS' GOOSE: An adult was observed on 20 January at Pea Island, N.C., by Charlie Lyon. It was seen on 26 January by Ricky Davis and party.

GREEN-WINGED (EURASIAN) TEAL: Anson Cooke noted this very rare subspecies at Bodie Island, N.C., on 4 March.

EURASIAN WIGEON: One was seen in late January at Pea Island by Marc Eisdorfer and Mark Crotteau.

GREATER SCAUP: Ron Warner saw a male on 6 December at Lake Osceola near Hendersonville, N.C. Two Redheads, one Red-breasted Merganser, and two unidentified female scaups were also present. Six Greaters were noted on Lake Norman, N.C., on 10 December by Heathy Walker and Harriet Whitsett, and a pair was seen by Philip Crutchfield at Fayetteville, N.C., on 23 February.

COMMON EIDER: Individuals were found in North Carolina at Oregon Inlet on 20 January (Charlie Lyon), at Hatteras Inlet on 27 January (Harry LeGrand, Ricky Davis), and at Fort Macon State Park on 8 March (R.J. Hader); and in South Carolina at Murrells Inlet on 1 January (Lex Glover, Perry Nugent) and at Huntington Beach State Park on 27 January (Carolina Bird Club).

KING EIDER: A female was present most of December and January at Radio Island near Morehead City, N.C. (John Fussell et al.), whereas R.J. Hader saw a female, perhaps the above bird, plus an immature male at Fort Macon State Park on 21 and 22 February.

HARLEQUIN DUCK: Always notable in the Carolinas, a female spent from 16 December to late January near a pier at Pine Knoll Shores, N.C. (Gil Miller et al.); two females were seen at Murrells Inlet, S.C., from 1 to 7 January (Perry Nugent, Greg Cornwell, Randy Grover); and an adult male was noted at Fort Macon State Park from 21 to 23 February (R.J. Hader).

WHITE-WINGED SCOTER: One was unusual at Lake Mattamuskeet, as seen by Merrill Lynch on 27 November.

BALD EAGLE: The Mid-winter Bald Eagle Survey in North Carolina tallied 20 birds between 2 and 16 January, according to Melinda Welton. Thirteen eagles on the survey were seen by Dick Brown and others along the Yadkin and Pee Dee River system, mainly in the Badin Lake area.

BROAD-WINGED HAWK: Seldom seen in winter was an immature photographed on a telephone wire at Cape Hatteras point, N.C., on 27 December by Allen Bryan. [I have seen the slide of the hawk and agree with the identification.—HEL]

ROUGH-LEGGED HAWK: Perhaps the first Rough-legged ever photographed in North Carolina was a light-phase bird at First Colony Farms just west of Lake Phelps on 29 December, seen by Allen Bryan and Lance Peacock. [Identifiable photos examined by me.—HEL] Frank Enders saw a light-phase hawk hovering near I-95 and NC 903 in Halifax County, N.C., on 16 January.

GOLDEN EAGLE: Dennis Forsythe and others observed an immature at Santee National Wildlife Refuge, S.C., on 29 December and again on 12 February.

MERLIN: Individuals were seen inland near Halifax, N.C., on 1 January (Merrill and Karen Lynch); near Fayetteville, N.C., on 12 January (Philip Crutchfield); and near Pendleton, S.C., on 15 February (Charlie Wooten).

PEREGRINE FALCON: Very rare in winter away from the coast were singles seen by Bruce Mack in Richland County, S.C., on 9 December; by John Wright at New Holland, N.C., on 30 December; and by Charlie Wooten near Pendleton, S.C., on 19 January.

YELLOW RAIL: A highly significant record was the discovery of an emaciated bird on the side of a road near Oriental, N.C., on 23 January by Dorothy Foy. This record occurred 2 days after the coldest weather ever to hit the Carolinas.

KING RAIL: Merrill Lynch saw a live rail along a road near Louisburg, N.C., on 5 October.

WHIMBREL: One was rare in winter on 26 December at Sunset Beach, N.C., as noted by Mark Oberle.

RUDDY TURNSTONE: An excellent count was 310 at Breach Inlet, Sullivan's Island, S.C., on 1 December (Douglas McNair).

DUNLIN: Notable inland in midwinter were individuals seen by Charlie Wooten near Pendleton, S.C., on 19 and 31 January.

LONG-BILLED DOWITCHER: Eight were seen by Ricky Davis, Kay Coburn, and Harry LeGrand at a pond in Buxton, N.C., on 26 January.

RED PHALAROPE: Dave Lee saw the species off Oregon Inlet on two dates in December and on 21 February, when 40 were noted.

LONG-TAILED JAEGER: A first winter record for the Carolinas was one observed carefully by Dave Lee and Wayne Irvin off Oregon Inlet on 20 December.

LITTLE GULL: An adult was studied among a large flock of Bonaparte's Gulls over the surf at Pea Island on 16 February (Harry LeGrand, Ricky Davis, Kay Coburn).

COMMON BLACK-HEADED GULL: Derb and Ann Carter observed an adult at a sewage treatment plant near Carolina Beach, N.C., on 5 January. It was collected by Dave Lee for the N.C. State Museum of Natural History a few days later; this is the first specimen for the state. Others were near Swanquarter, N.C., on 26 December (Harry LeGrand et al.) and at Hatteras Inlet on 19 January (Charlie Lyon).

BONAPARTE'S GULL: Harry LeGrand and Ricky Davis estimated about 10,000 along the Outer Banks of North Carolina from Corolla to Cape Hatteras during 15 to 17 February. A count of 100+ was notable at Blewett Falls Lake on the Pee Dee River, N.C., on 1 February (Nick Lovin).

LESSER BLACK-BACKED GULL: In addition to several records from coastal Dare County,

- N.C., a gull in third-winter plumage was seen on the White Oak River near Cape Carteret, N.C., on 22 January (Henry Haberyan).
- GLAUCOUS GULL:** Individuals were noted in North Carolina during the winter at Cape Hatteras point, Hatteras Inlet, Ocracoke, and Morehead City. Another was collected by Will Post (for Charleston Museum) at Mount Pleasant, S.C., on 20 December.
- BLACK-LEGGED KITTIWAKE:** Immatures were seen from shore at Cape Hatteras point on 29 December by Mike Tove and Bob Lewis and at Pine Knoll Shores on 23 and 24 February by John Fussell and Larry Crawford. Dave Lee found the species on three December pelagic trips out of Oregon Inlet, with 43 on 20 December.
- CASPIAN TERN:** Very late was one seen at Fort Macon State Park on 8 January by John Fussell.
- BRIDLED TERN:** A first winter record for North Carolina was two seen by Dave Lee off Oregon Inlet on 20 December. Four other dark terns were seen but could not be identified.
- BLACK SKIMMER:** Somewhat north of the winter range were six at Oregon Inlet on 20 January (Mike Alford, JoAnne Powell).
- DOVEKIE:** Always notable, one was seen several miles off Oregon Inlet on 21 February by Dave Lee and Derb Carter.
- SHORT-EARED OWL:** A very rare record for northwestern South Carolina was one found shot at Clemson on 6 December by Linda Wang. The owl is now a specimen in the Clemson University collection.
- NORTHERN SAW-WHET OWL:** Ross Jervis found an injured owl near the intersection of NC 54 and NC 751 in Durham County on 29 December. It died shortly afterwards.
- CHUCK-WILL'S-WIDOW:** Perhaps the second winter record for North Carolina was one seen on several occasions, even with a scope, in a pine grove on Bodie Island on 28 December (Ricky Davis and party).
- WESTERN KINGBIRD:** Very late were individuals seen at Hatteras on 27 December (Ken Knapp, Bob Lewis), at Pea Island on 28 December (John Wright et al.), and along the Waccamaw River, S.C., on 6 January (Greg Cornwell et al.).
- SEDGE WREN:** Perhaps a lingering migrant was one seen by Harry LeGrand and Ricky Davis at the Wilson Municipal Airport, N.C., on 2 December.
- WHITE-EYED VIREO:** Philip Crutchfield observed a late individual near Fayetteville, N.C., on 22 December.
- ORANGE-CROWNED WARBLER:** Ken Knapp noted one at Jordan Lake, N.C., on 30 December.
- NORTHERN PARULA:** Quite late was a male seen by Sidney Gauthreaux near Martin, S.C., on 15 December.
- BLACK-THROATED BLUE WARBLER:** An excellent find was a female seen by Ricky Davis and Kay Coburn near the northern tip of Roanoke Island, N.C., on 29 December.
- PRAIRIE WARBLER:** Ricky Davis and Kay Coburn observed one near Lake Mattamuskeet, N.C., on 30 December.
- PALM WARBLER:** One seen by Allen Bryan in Rockingham County, N.C., on 11 January was somewhat far inland in midwinter.
- OVENBIRD:** Seldom seen in winter was one found at Salem Lake in Winston-Salem, N.C., on 29 December by J.D. Bottoms and Clarence Mattox.
- WILSON'S WARBLER:** Jim McConnell carefully studied a very late warbler on 22 December near Falls Lake in Durham County, N.C. Excellent, lengthy details were provided for the record.
- WESTERN TANAGER:** A male was seen in a wooded residential area at Woodlake, near Vass, N.C., on 1 December by Allen Bryan and Ricky Davis.
- VESPER SPARROW:** One near the edge of the winter range was seen by Ricky Davis at the Wilson Municipal Airport, N.C., on 19 January.

GRASSHOPPER SPARROW: Several were noted in the Townville, S.C., area all winter by Charlie Wooten, with a good January count of three on the 6th.

LINCOLN'S SPARROW: At least two were seen on three dates from 29 December to 17 February in extensive brush piles at First Colony Farms just west of Lake Phelps, N.C. (Allen Bryan et al.). Individuals were also observed near Judges Quarter in Hyde County, N.C., on 30 December (Ricky Davis), at the Wilson airport on 2 December (Davis, Harry LeGrand), at Mason Farm near Chapel Hill on 9 February (Marc Eisdorfer), near Townville, S.C., on 16 December and 10 February (Charlie Wooten), and near Clemson on 24 February (Sidney Gauthreaux). This species winters regularly in northwestern South Carolina, and perhaps it is also regular in parts of eastern North Carolina.

WHITE-CROWNED SPARROW: A major wintering concentration in extreme eastern North Carolina was found at First Colony Farms near Lake Phelps, where as many as 35 were noted all winter by Allen Bryan and others. Additional birds in eastern North Carolina were three seen by two parties in the Lake Mattamuskeet area on 30 December (Ricky Davis, John Wright) and at least five, including an adult, between Corolla and Sanderling on Currituck Banks on 15 February (Davis, Harry LeGrand).

LAPLAND LONGSPUR: Excellent numbers were noted in extensive plowed fields near Townville (at a regular wintering site), with 25 on 24 February and 20 on 4 March, as noted by Sidney Gauthreaux and others. The only other reports for the winter were from Cape Hatteras point and Oconeechee Neck in Northampton County, N.C.

SNOW BUNTING: Very rare inland was one seen along the shore of Jordan Lake at Seaforth promontory on 9 December by Ricky Davis, Harry LeGrand, and Wayne Irvin.

BREWER'S BLACKBIRD: One was observed and photographed by Robert Ruiz in his yard in Swannanoa, N.C., from January to 14 March. A male was seen by Charlie Wooten at Townville on 23 February. [No descriptions or photos accompanied these reports.—HEL]

YELLOW-HEADED BLACKBIRD: A female was seen in a yard in Mount Pleasant, S.C., on 30 September by B. Keefe (fide Dennis Forsythe). An adult male was photographed at Swanquarter, N.C., on 17 February by Peggy Jansen. [Photo examined by me.—HEL]

WINTER FINCH FLIGHT: The winter of 1984-1985 was a poor one in the Carolinas for numbers of cardueline finches. Purple Finches were in much lower numbers than usual, Pine Siskins were very uncommon to rare, and there were only a few scattered reports of Evening Grosbeaks. Crossbills and redpolls were not reported.

Newspaper Gleanings

A State lawmaker in Connecticut has introduced a bill to make it illegal to throw rice at weddings. Rep. Mae Schmidle says, "Birds cannot digest raw rice. When it gets in their stomachs, it expands and causes violent death."

Ornithologists in Idaho say the scales on birds' toes vary enough to serve as identification. Numbered bands may be removed by poachers, so it is possible that footprints will replace banding.

Roger Tory Peterson, 76 years old, led a team of four on a 24-hour bird count in Texas, logging 244 species—one more than a California team could produce last year.

Down at Lake Mattamuskeet, N.C., two Bald Eagles have been seen after hatching in a nest under observation—and later a third youngster arrived.—LCF



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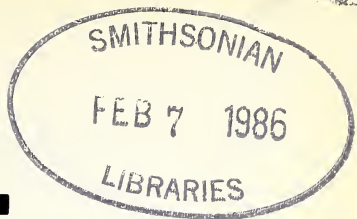
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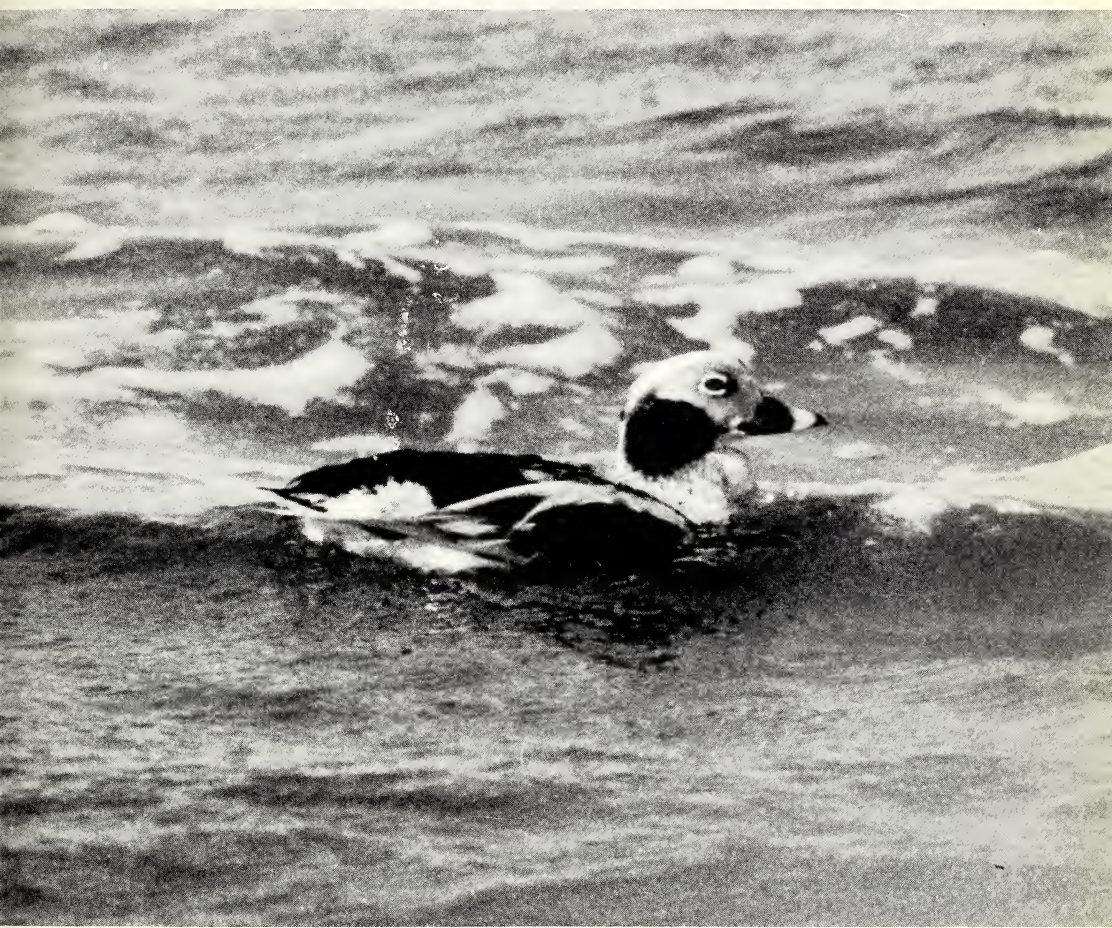


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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—W. David Chamberlain photographed an immature male Oldsquaw still in first-winter plumage at Sullivan's Island, S.C., on the late date of 18 May 1984.

Breeding-season Records of Boreal Birds in Western North Carolina with Additional Information on Species Summering on Grandfather Mountain

DAVID S. LEE

During June and early July of 1985, I had the opportunity to spend 11 days on Grandfather Mountain (Avery, Caldwell, and Watauga Counties), and several more field days were contributed by other North Carolina State Museum staff members and research associates. I was attempting to characterize the bird communities of the area, and most of the other workers were surveying mammals. A general description of the mountain and its plant and avian communities as they relate to elevation is provided by Lee et al. (1985). In that study the authors listed 84 breeding and presumed breeding species from Grandfather Mountain. With the additional birds found in the summer of 1985, the total, now 117, is impressive. This adjusted figure represents well over half the species known to breed in the state, and another 6 to 12 species are expected to occur. Certainly Grandfather Mountain has one of the, if not the, most diverse nesting-season faunas for eastern North America.

Species worthy of special comment are discussed below.

NORTHERN GOSHAWK (*Accipiter gentilis*)

Attracted by the sounds of harassing American Crows, I looked up in time to spot an extremely large accipiter being escorted by 8 to 10 crows. Heavy fog prevented me from seeing any field marks on the hawk in spite of its being less than 50 feet away. Nevertheless, its extremely large size and accipiter silhouette rule out all other species. The date, 16 July 1985, would be quite late for nesting for an accipiter in the Southeast, and it is not unlikely that the bird traveled some distance to Grandfather Mountain during postbreeding dispersal. On the other hand, an intriguing number of nesting-season reports exist for the southern Appalachians, and the secretive nature of the bird makes documentation of nesting difficult even under the best conditions. Haney (1981) summarizes the four nesting-season records for the Great Smoky Mountains National Park (11 April 1981 [adult], 18 June 1971, 15 June 1970, and June 197[6?]). Most are from the Tennessee-North Carolina border. Additionally, Tove (1977) reports an adult from the Shining Rock Wilderness area on 3 April 1984, and Enole (1970) notes one from Franklin on 2 March. There are at least 12 other records from North Carolina from outside the nesting season or from unlikely nesting areas.

The most interesting records come from Cranberry, Avery County, from a period of 1971 through 1975. The site of these records is only 11 air miles from the summit of Grandfather Mountain. Dartha Frank of Cranberry reported in a series of letters to the N.C. State Museum in 1971 numerous sightings of several "Silver Eagles." Robert Hader (1975) interviewed Mrs. Frank personally and confirmed what the museum determined through an exchange of half a dozen letters, that the birds in question were Northern Goshawks. Hader's note in *The Chat* accurately summarizes the nature of these records, and I see no need to repeat his findings.

In a telephone conversation with Mrs. Frank in 1975, I learned that she was still seeing goshawks as recently as 4 October 1975 (3 birds) and 8 October 1975 (2 birds, "one appeared to be wounded"). I drove to Cranberry to discuss these records in the spring of 1976. At this time she reaffirmed the information in the museum correspondence and Hader's interview. I was quite impressed with her general knowledge of the natural history of the area. We discussed at length the different types of birds and mammals of the Cranberry area. Interestingly, she reported that the birds had nested in her back yard several years before (I assume this must have been after Hader's June 1972 visit). They had raised three young birds that were fed and taught to hunt by the adult(s?) in her yard. The winter following the nesting, the mining company that owned the adjacent property cut down the nesting tree, and she had not seen the birds again until the fall of 1975. While all reports of birds leave some room for question of identification and behavioral interpretation, this record is in my opinion one of the best documentations we have of goshawks in the southern Appalachians. A sketch of a "Silver Eagle" made by Frank in 1971, prior to her seeing any field guides, is provided in Figure 1. Although there is little doubt that the Northern Goshawk nests, at least on occasion, in the southern Appalachians, the southernmost documented nesting records are from Tucker (1975) and Randolph (1951, 1959) Counties, West Virginia (Hall 1983).

BLACK-BILLED CUCKOO (*Coccyzus erythrophthalmus*)

This species was heard or seen at three general locations, all within the upper hardwood and transition zones of the mountain (3550-4575 feet). I heard several singing Black-billed Cuckoos in this same zone (4500 feet) on 29 September 1984 near the Pilot Knob portion of the mountain. Bruner (unpublished field notes, NCSM, 1911) noted these cuckoos at 1600 feet at Edgemont, Caldwell County (the base of Grandfather Mountain). These records represent one of a few breeding-season reports of Black-billed Cuckoos from North Carolina, although they certainly must be widespread throughout the intermediate elevation zones of our mountains (Fig. 2). Interestingly, no Yellow-billed Cuckoos were found in the 1984 or 1985 surveys, by Bruner and Field in 1911, or by Alexander (1973).

YELLOW-BELLIED FLYCATCHER (*Empidonax flaviventris*)

On 16 July 1985 I encountered a single, adult Yellow-bellied Flycatcher at the lower limit of the spruce-fir zone of Grandfather Mountain. The bird was vocal but not singing its species-specific song. The flycatcher was studied carefully at close range for about a minute. This is the only breeding-season record of this species for North Carolina. In that the bird was not singing and that *Empidonax* are notoriously difficult to identify, this report should serve only to indicate the potential for local nesting. [The bird in question had a yellow ventral surface, including the throat.] An individual found on Grandfather Mountain on 29 May 1985 at 5500 feet (Lee et al. 1985) was assumed to be a spring transient in that this species is known to migrate quite late.

The Yellow-bellied Flycatcher summers sparingly in the southern Appalachians south to Randolph County, West Virginia (Hall 1983). Shelton (1976) provides a single nesting-season record for Mount Rogers in southwestern Virginia. He reports an adult male, in diseased firs, southeast of the summit on 11 and 19 August 1973. The bird was photographed and its song recorded. This bird and the Grandfather Mountain record constitute the southernmost summer occurrences for the species.

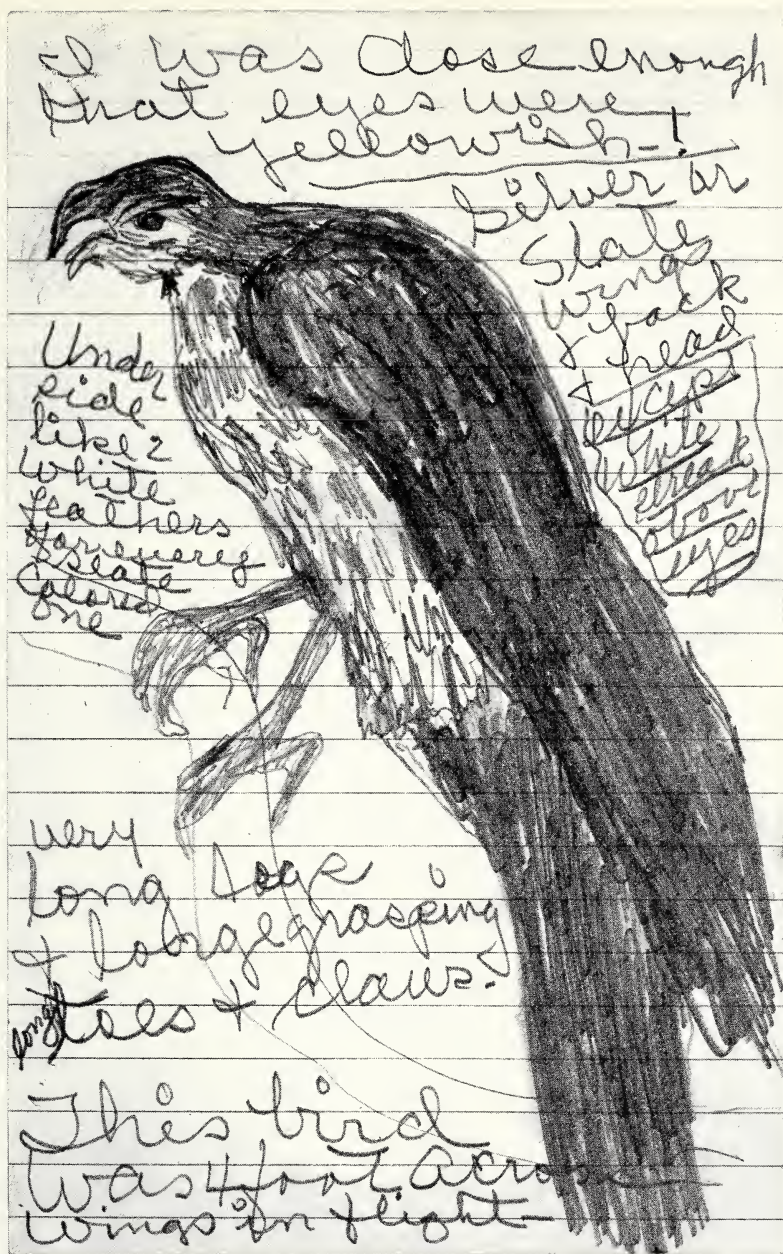


Fig. 1. Original sketch of silver eagle made by Dartha Frank of Cranberry, N.C., in 1971. Note descriptive notes in margins of sketch. (NCSM files)

OLIVE-SIDED FLYCATCHER (*Nuttallornis borealis*)

A single Olive-sided Flycatcher was seen on 16 July 1985 from the top of Calloway Peak. The bird was perched on a dead limb at the edge of an opening in the spruce-fir forest just below the 5964-foot peak. Wayne Irvin searched the area for the bird on 20 July without success.

This species is now regarded a rare summer resident in West Virginia, eastern Tennessee, and western North Carolina. Williams (1976) provides the only positive nest record south of West Virginia; however, the Olive-sided Flycatcher is assumed to have nested commonly in the Appalachians through the late 1950s (see Stupka 1963, Cairns 1889). Williams' nest was in the Great Smoky Mountains National Park and active from 30 June through 18 July 1974. Phillips (1979) reports three records (adult and immature) on 17, 19, and 28 August from the North Carolina portion of Roan Mountain in Mitchell County at 5400 feet, and Rhoads (1895) previously recorded this flycatcher from the Tennessee side of Roan Mountain at 4000 feet. Additionally, records from 24 June 1972 in Alleghany County (Chat 38:1-2) and 30 June 1959 at Raven Rock Camp, Surry County (Chat 23:90) seem well within the nesting period. Birds observed in August 1968 at North Wilksboro were seen feeding begging young on 12 September (Chat 33:78). Figure 3 illustrates the breeding distribution in North Carolina as it is now understood. Thus there are only five nesting-season records for the southern Appalachians between West Virginia (Hall 1983) and the Smoky Mountains since the 1950s.

There are several additional records from the mountains of the state that may well represent nesting birds, but they are from known migration periods of the Olive-sided Flycatcher and probably are best ignored in that no evidence was seen suggesting nesting. Migrants have been reported in fall as early as 11 August at Raleigh (Chat 39:27) and 17 August at Winston-Salem (Chat 41:54-55) and in spring as late as 17 May outside Raleigh (Chat 36:96) and 20 May in Caswell County (Chat 43:99). The status of two 7 June records (Burke County, 1977, Chat 44:24; Watauga County, 1981, Chat 46:23) cannot be determined.

WILLOW FLYCATCHER (*Empidonax traillii*)

On 28 June and 15 July 1985 these flycatchers were seen feeding nearly grown young in willow thickets along the Watauga River (NC 105) in Watauga County (3090 feet). Although they were not heard, elevation and habitat exclude the possibility of their being Alder Flycatchers (*E. alnorum*). The open balds along the ridge of Grandfather are perhaps too small, and the others too densely vegetated, to provide habitat for Alder Flycatchers. I have searched for them several times without success.

RUBY-CROWNED KINGLET (*Regulus calendula*)

On 27 June 1985 I saw a Ruby-crowned Kinglet on the Craggy Way Trail of Grandfather Mountain. The single bird, in transition-zone forest at 4300 feet, was carefully studied. There are several other summer sightings for North Carolina's mountains (NCSM unpublished records: Blue Ridge Parkway, near Asheville, 1975; Mount Mitchell, 1974; and Pisgah Inn, 1974. Although these reports of occurrence are from mid-June through 6 August, I suspect that the birds should best be considered as vagrants. Potter (1979), for example, reports a 29 July 1978 bird in Franklin County,

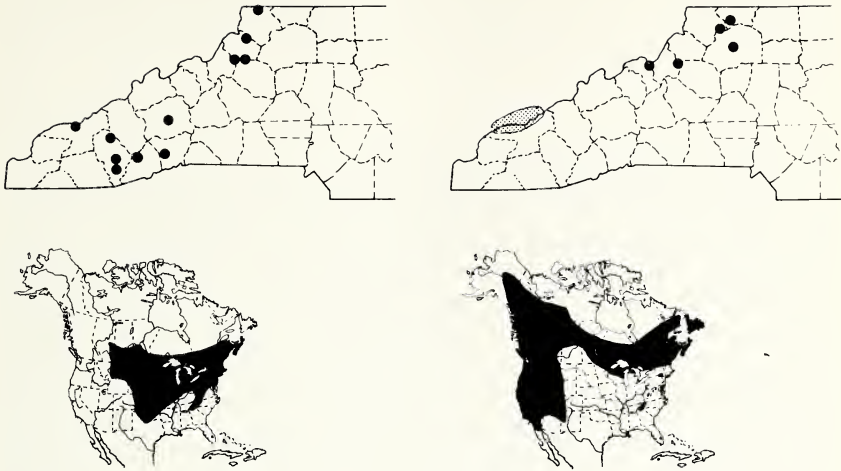


Fig. 2. (Left above) Nesting-season records of Black-billed Cuckoo in North Carolina. Summer records of presumed vagrants on the coastal plain and piedmont are not included. Insert map of North America indicates total breeding range. (Modified from North Carolina breeding-bird distributional survey, NCSM)

Fig. 3. (Right above) Recent nesting-season records of Olive-sided Flycatcher in North Carolina.

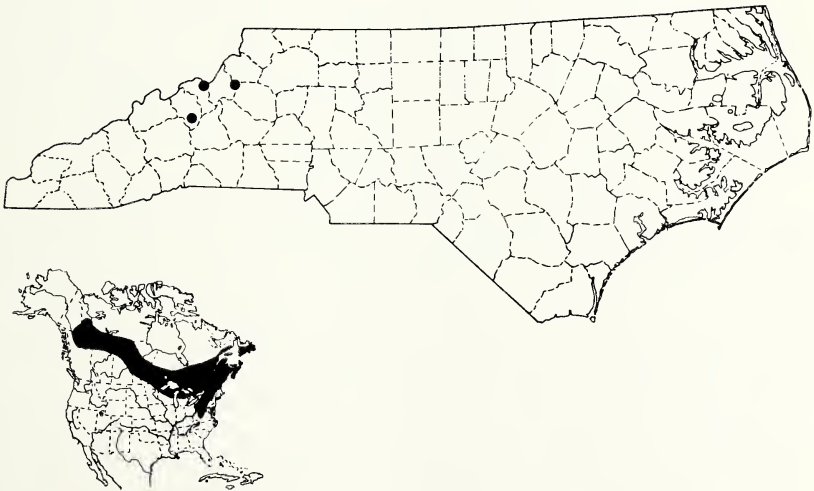


Fig. 4. Nesting-season records of Magnolia Warbler in North Carolina.

well removed from any potential nesting area. Early and late migrants have been noted near Wilmington on 17 August (Chat 43:33) and 29 August (Chat 38:28) and at Winston-Salem on 19 June 1979 (Chat 44:24). The potential exists for local nesting in northwestern North Carolina, and Hall (1983) discusses the possibility of these birds' nesting in West Virginia.

MAGNOLIA WARBLER (*Dendroica magnolia*)

Although breeding Magnolia Warblers have been known from the mountains of West Virginia and Virginia for some time, there had not been any summer records in southwestern Virginia until 1966. Since that time the number of sightings and reported individuals have increased considerably. Presently this warbler is well documented from the Mountain Lake area in Highland County, at Beartown (Tazewell County), Beartown Mountain (Russell County), Haw Orchard Mountain (Grayson County), Abingdon (Washington County), and White Top and Mt. Rogers in Virginia (Peake 1978; Stevens 1965, 1967, 1968, 1976; Scott 1966, 1975; Simpson 1976). Hall (1983) shows the species to be present at no fewer than 11 high-elevation areas in West Virginia. Herndon (1977) summarized the reported summer occurrences of Magnolia Warblers on Roan Mountain, with the first record in 1959. The site where the adults were seen carrying food on 14 July 1975 is on the North Carolina side of the mountain, although Herndon does not mention this (see Amer. Birds 29:973). A breeding-season foray by the Carolina Bird Club (Potter and LeGrand 1980), however, failed to record the species.

On 27 June 1985 I heard and saw three Magnolia Warblers (2 males, 1 female) along the summit ridge of Grandfather Mountain. The birds were all within half a mile of each other, even though I estimate that I walked a 12- to 14-mile transect that particular day. A week later I was unable to relocate them, perhaps because I did not arrive at the site until late in the day. The birds were in the spruce-fir zone, where there were scattered openings of stunted trees and Spineless Blackberries (*Rubus canadensis*). There are three other reports for the state that should be mentioned. Birds were heard singing on Richland Balsam in June "a few years back" (Chat 45:23), and a single bird was found on Mount Mitchell on 5 June 1972 (Amer. Birds 26:860). Cairns (1889) assumed that Magnolia Warblers nested in our mountains and stated that young are common in July. Figure 4 indicates the suspected breeding sites for the state.

One of the past problems in interpreting the seasonal status of this warbler is its documented protracted migration period. Spring migrants have been noted as late as 30 May (Wilmington, Chat 45:109; Winston-Salem, Chat 40:104), and fall migrants as early as 29 July (Raleigh, Chat 37:110). Stevens (1965) reported adults feeding young in Virginia between 16 June and 23 July; so the dates on which Magnolia Warblers were found on Grandfather Mountain, Roan Mountain, and Mount Mitchell are within the documented nesting period for the species in the southern Appalachians.

Although they were seemingly confined to a restricted area on Grandfather Mountain, Magnolia Warblers in Virginia have been found from mountain summits down to 3700 feet in spruce, spruce-hemlock, rhododendron-spruce-Yellow Birch forest, mixed coniferous hardwoods, and virgin hemlock forest. Many of these transition communities are available on Grandfather Mountain. The Roan Mountain birds were in the vicinity of the rhododendron garden.

Mention should also be made of the diverse assemblage of wood warblers occurring on Grandfather Mountain. A minimum of 20 of the 27 species nesting in the southeastern United States have been found here. These birds generally can be grouped into low-elevation species (up to 2500 feet, e.g. Northern Parula [six species]); wide-ranging species confined to low and intermediate elevations (up to 4500 feet, e.g. Ovenbird [seven species]; species in the southern Appalachians that are generally restricted to intermediate elevations (2500-4500 feet, e.g. Blackburnian Warbler [five species]; and high-elevation species (4000 feet and higher, e.g. Canada Warbler [two species]).

Additional breeding-season species found in 1985 and not included in Lee et al. (1985) or in the list above are Wood Duck, Mallard, Wild Turkey (H. Morton, pers. comm.), Cooper's Hawk, Killdeer, American Woodcock (female with young, H. Morton, pers. comm.), Rock Dove (one individual), Eastern Screech-Owl, Barred Owl, Whip-poor-will, Yellow-throated Vireo, Yellow Warbler, Golden-winged Warbler, American Redstart, Swainson's Warbler, Louisiana Waterthrush, Yellow-breasted Chat, Blue Grosbeak, Grasshopper Sparrow, and Northern Oriole. Ruffed Grouse, while included on the 1984 list, were not personally encountered until this year. A male Peregrine Falcon, one of several released on the mountain in 1984, returned and remained throughout the summer. It was observed feeding from the hacking station (Will Suggs, pers. comm.). Wayne Irvin (NCSM) informed me that the 13 May record of a Loggerhead Shrike (Wray and Wray 1948) should also be regarded as a breeding record in that this date is well within the breeding season for this bird in the Southeast. Siegel (1980), for example, notes nesting in late March with peak nest activity in mid-April. Overwintering migrants peaked in January and were out of Siegel's study area by March. In spite of searching all low-elevation habitats that seemed suitable for shrikes, I was unable to locate them.

S.C. Bruner's original field records are on file at the N.C. State Museum. From 17 to 27 June 1911 he worked the Grandfather Mountain area in Caldwell and Avery Counties. He noted five species that I was unable to find. In each case the birds were encountered only once, so I do not interpret this to indicate major changes in habitats. Two of the species certainly do not represent nesting birds (Great Blue Heron, Lesser Scaup). The other three (Green-backed Heron, Kentucky Warbler, and Prairie Warbler) were all found at elevations of about 1600 feet, a zone I have not yet worked. Interestingly, House Sparrows were already established at Linville by the summer of 1911. Bruner provided rather precise information for locality and elevation for 107 sightings of individual birds. Comparing his records and mine, I find that the general composition of the summer bird fauna has changed little, if any, in the last 75 years. The shrikes that were present in the late 1940s (see above) were not found by Bruner in 1911.

High winds and rain during my 1985 period of stay made it impractical to census high and intermediate elevations with the intensity intended. This perhaps resulted in my failure to relocate several of the more interesting finds of the 1984 season (Northern Saw-whet Owl and Red Crossbill). On the other hand, Long-eared Owls, Black-capped Chickadees, and Hermit Thrushes were found again. (Bryan Taylor, N.C. State Parks, also reported Hermit Thrushes again from Mount Mitchell, and a voice specimen is on file at the N.C. State Museum.) On 27 June 1985 I located a nesting pair of Brown Creepers at 5650 feet, confirming the suspected high-elevation nesting of the previous season.

Using a surveying altimeter calibrated to 25-foot intervals, I was able to get precise elevational distributions on more than 4500 individual birds, representing about 100 species. Many of the local elevational limits presented by Lee et al. (1985) are now greatly extended, but in most cases the patterns illustrated are similar.

It probably should be emphasized that in spite of a combination of 18 days and 9 nights spent on the mountain, many of the more interesting birds discussed in detail here and by Lee et al. (1985) were found only one to three times. These include Northern Goshawk, Long-eared Owl, Northern Saw-whet Owl, Yellow-bellied Flycatcher, Olive-sided Flycatcher, Hermit Thrush, Ruby-crowned Kinglet, Warbling Vireo, and Magnolia Warbler. Collectively these species presently constitute less than 0.3% of the total number of summer birds encountered. Even though the trail system on Grandfather Mountain is well developed, only a very small percentage of the total 5000-acre "back country" is accessible. Furthermore, the dense vegetation of the mountain makes it necessary to locate most birds by sound rather than visually, while the terrain and weather make brief exploration of limited value and extended visits tiring. Without considerable preplanning, it is impossible to reach key, high-elevation habitats of the mountain specialties during prime morning singing periods. Persons unwilling to commit themselves to extended visits to the mountains will find the area frustrating to work.

With the addition and potential addition of the birds discussed above to the breeding-season fauna, it appears that Grandfather Mountain occupies a key position in the southern Appalachians in regard to the distribution and southern "range expansion" of northern faunal elements. At present this mountain is one of three known breeding-season sites for the Hermit Thrush and Magnolia Warbler south of Virginia, the only known North Carolina summer site for the Long-eared Owl and Yellow-bellied Flycatcher, and one of a limited number of places between the Plott Balsams and southwestern Virginia where Olive-sided Flycatchers, Black-capped Chickadees, N. Saw-whet Owls, and other boreal species still occur. These species represent a combination of relicts, semi-relicts, and documented instances of recent range expansions. It should be pointed out that these "recent" expansions may simply represent reclaiming of former habitats regularly occupied prior to the extensive logging that took place in the Appalachians at the turn of the century. The lack of previous records of the least common species may be an artifact of the general inaccessibility of the upper zones of mountains to 19th-century naturalists.

The unique zoogeographical position of Grandfather Mountain is illustrated by more than its extraordinary bird life. Clark and Lee (in press), for example, have just reported on the discovery of the Virginia Big-eared Bat (*Plecotus townsendii virginiana*) in two caves on the mountain. This bat was previously believed to be essentially restricted to the mountains of West Virginia with outlying populations in eastern Kentucky and southwestern Virginia. Various other mammals with restricted high-elevation distributions were also encountered along with Appalachian endemics and disjunct populations.

I will take this opportunity to point out that the elevational distribution depicted for the Black-throated Blue Warbler by Lee et al. (1985) is in error. It is typically an inhabitant of mixed mesophytic forest with occasional birds found in higher transition zones. Contrary to a basically correct generalization in this same article, many of the boreal species listed as occurring south to the mountains of North Carolina and

Tennessee do spill over into northern Georgia and Alabama. Also, in reviewing literature on southern Appalachian bird life, I note that the Purple Finch nesting-season record provided by Phillips (1979) for Roan Mountain is from the North Carolina portion of the mountain. The North Carolina bird records committee had previously overlooked this fact.

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I thank Susan Sfera, E. Wayne Irvin, Mary Kay Clark, and Danny Smith (all NCSM) for assistance with the field work. Robert Hader provided notes he made on the mountain in 1960, which, while not incorporated here, will be useful for a planned detailed interpretation of the faunal diversity. Eloise Potter found Bruner's field notes while sorting and filing boxes of notes and paper scraps, the likes of which seem to accumulate in museums. Potter is developing an extensive file on birds of the state. Use of this file saved considerable time in the presentation of text and maps. Will Suggs, Wildlife Resources Commission, shared information on the Peregrine Falcons, and Hugh Morton provided several interesting bird records, access to the mountain, and lodging during portions of this study. Contribution 1985-13 of the North Carolina Biological Survey.

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North Carolina State Museum of Natural History, P.O. Box 27647, Raleigh, N.C. 27611

Backyard Birding

... with Gail T. Whitehurst

The Importance of Bird Songs, Call Notes, Flight Calls, and Scold Notes as Aids in Identification

One of the nicest things about birds, to a birder, is the fact that they sing, chirp, call, chip, scold, squawk, scream, yell, whistle, or make other sounds most of their waking hours. For those who are not interested, the early-morning chorus of songsters in the spring can be annoying. Too bad! This is the optimum time to enjoy the many beautiful and varied sounds the bird world has to offer.

Birds songs, whether pleasing or distasteful to the human ear, were not designed for our benefit. However, we can not only enjoy the music, but also, as birders, find these songs to be of great benefit in determining the species around us. Much has been written as to why birds sing, and how they do it. There is still a considerable amount of research being done on bird songs. Ornithologists convert recordings of vocalizations into a graphic format, called a sonogram, to facilitate comparative analyses. However, only careful field observations can correlate the various sounds with the birds' behavior.

Birds do not sing all of the time. Some, such as the Carolina Wren and Song Sparrow sing almost the year around. Others cease singing with the onset of the postnuptial molt and do not begin again until the days begin to lengthen in late winter. After all, song is primarily a means of establishing a territory and attracting a mate. Some birds sing only "whisper" songs in the fall. Young birds may take up "practicing" and learning how to sing the songs appropriate to their species during fall and winter. These songs are often imperfect and include sounds of other species, which the novices drop as they mature.

What, then, can we use as aids in identifying birds during these nonsinging periods? That is where knowing the call notes, flight calls, and scold notes comes in handy. Chip notes of fall warblers are helpful in locating the birds. These notes do differ in intensity and pitch. Our wintering Yellow-rumped Warbler has a distinctive chip note that, once heard and learned, can separate "myrts" from the other wintering warblers, such as the Pine Warbler. The *Oporonis* warblers, those found most often on the ground or in low shrubs, have a metallic sound to their chip notes. The Cape May Warbler, in addition to its high chip note, in fall sometimes gives a "squeaky" sound similar to that of a chickadee or titmouse.

The "checks, chacks, and chucks" with differing pitches and intensity enable one to distinguish the different species of blackbirds—red-wingeds, grackles, Brewer's, and

cowbirds. There is a similar quality to the call notes and scold notes among birds of the same family. This is particularly noticeable among the blackbirds and woodpeckers.

Flight calls are generally given by birds that tend to travel in flocks. The finches and blackbirds are vociferous while flying overhead. Perhaps these birds call in an effort to keep the flock together. If we learn these calls and look up quickly when hearing them, we can see species we might otherwise miss. This is helpful when one is doing bird counts or keeping records on migration dates.

Mockingbirds have a deep and harsh scold note as does the Brown Thrasher, but each is distinctively different. Most everyone is familiar with the scold note of the Gray Catbird, which gave it its name. To me these notes also sound like an old-fashioned fishing reel, being wound in.

The smaller the bird, the more high-pitched, and often louder, the song. If you think the Carolina Wren is loud, listen to the smaller House Wren. The even tinier Winter Wren comes forth strongest of all. The tiny Ruby-crowned Kinglet, in spring, can really startle and surprise you with the power in his voice.

The *Oporonis* warblers have very strong voices. One can hear them and never find the singer whether it be a waterthrush or an Ovenbird (with his ringing “teacher, teacher”) or the Hooded Warbler. These birds may be completely hidden and sing from the ground, a low bush, or just over your head. They move about quickly without giving away their position. One instant, you hear the song here—suddenly it comes from over there. In dense bushes and vines the Common Yellowthroat easily eludes the birder who searches for the origin of the “witchity, witchity” song.

The Ruby-crowned Kinglet has a very distinctive call note, but one that easily goes unnoticed by beginning bird students. I call it a “rachety” sound—somewhat like some of the noises of the House Sparrow, but not nearly so loud. When disturbed or excited, the kinglet repeats this note quickly a number of times. I have found many a kinglet in fall and winter, high in a tree, after hearing this note. The Golden-crowned Kinglet has a very different note. It is somewhat like that of a chickadee, but much more highly pitched and not always within the hearing range of many folks. On a dark and cloudy day, a flock of kinglets high in a tree can often be distinguished only by their notes.

The sparrows—which may be very difficult to identify in a weedy field—all have their own specific notes. It is good to know their calls as they pop up briefly and disappear before you can see all the necessary field marks.

Then, there is the very special shrill or high, thin squeal that nearly all birds use to alert all species to the presence of a predator. I have seen many hawks in winter by heeding this alarm cry and looking up into the sky. All the birds take cover upon hearing this call. In the nesting season, robins and thrushes use the call when crows appear—they, too, are predators. Everyone is familiar with the yelling of crows when they spot a large hawk. Blue Jays do it, too, for crows, hawks, owls, and cats.

All of the thrushes have beautiful songs. Most birders are quite familiar with the lovely, flute-like notes of the Wood Thrush. It stops singing in early August, but sticks around until October. We have the Veery as a summer resident in our mountains. His song is quite different from that of the Wood Thrush, but a joy to hear. He and his cousins, the Swainson’s Thrush and Gray-cheeked Thrush, have a quality in their songs that makes them sound as if they are singing from inside of a can, pipe, or hollow tree. Out West, where Swainson’s Thrushes nest, they are often referred to as the “bird in a

can." As these thrushes migrate north in spring, they may be heard singing "whisper" songs in early morning. Each thrush species has its own distinctive call note, which is used frequently in the fall. The song of the Hermit Thrush, a winter resident in the Carolinas, is very beautiful too.

Incidentally, the Nightingale of Europe, famed in poetry and song, is a member of the thrush family. Roger Tory Peterson says, in his preface to the *Field Guide of European Birds*, that he has heard the song of the Nightingale and that it does not compare in beauty to that of our Wood Thrush!

Some birds are easier to hear singing than to see. The Red-eyed Vireo sings nearly all day long during the nesting season, but because of its color and generally sluggish movements, high in the tree tops, it is difficult to locate. This holds true for the Yellow-throated Vireo as well. The Yellow-billed Cuckoo can be heard for long distances, but is not so often seen.

Many bird watchers have discovered that they can bring small songbirds out into the open by making smacking sounds, by going "pshhh, pshhh, pshhh," or by playing screech-owl tapes. The last should not be done during the breeding season—nor should one play tapes of bird songs of the species he wishes to see. This can, and does, cause problems for the birds; they may even abandon their nests.

Tapes and recordings do have their place, however. Beginning bird students can make their field trips much more productive if they have had an opportunity to listen to recordings of the birds they expect to see. And advanced birders find that it helps to become familiar with the songs of birds they may encounter during trips to other parts of the country. Peterson's bird guides are most helpful in describing songs, notes, and calls and by using catch phrases. If one is really serious about finding new birds, some time spent poring over the pictures and reading about the songs before going out will be rewarding.

Classification of birds is constantly undergoing changes as more knowledge about them is acquired. Today's geneticists are able to prove, or disprove, relationships by studying the make-up of chromosomes and genes. Perhaps there is also some study going on comparing bird songs and call notes. For instance, we suggest that the scold notes of vireos with wing bars (e.g. Yellow-throated, Solitary and White-eyed) show a closer relationship between these species than with the Red-eyed Vireo, whose scold is totally different. We discovered (in Oregon) that one of the songs of the Green-tailed Towhee is like one of those of our own Rufous-sided Towhee. Both birds sing a short phrase that sounds to me like, "Chirp, chirp, See-bring." The first two notes on the same pitch are followed by a higher note and a lower one with the emphasis on the third note. The Rufous-sided Towhee west of the Rockies does not sing the familiar "Drink your tea"—he just settles for a long, drawn out "Te-e-e-ea." Both species have the "joreet" call—or is it "towhee" or "joree" to your ears?

Books and tapes are great helps, but there is no substitute for personal observation. Spending hours listening to songs and calls—seeing which bird was making the sounds and under what circumstances—is the best way to really learn them, and you can do it right in your own back yard!—GTW

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Red-cockaded Woodpecker Found Dead in Cavity Entrance

JOHN EMMETT CELY

Nongame-Heritage Trust Section
South Carolina Wildlife and Marine Resources Department
P.O. Box 167, Columbia, S.C. 29202

On 20 May 1985, while checking Red-cockaded Woodpecker (*Picoides borealis*) nesting activity on Manchester State Forest, Sumter County, S.C., I found a dead adult male Red-cockaded Woodpecker in a cavity entrance. The bird's head and neck were protruding from the cavity with the head pointed downward. There was no external damage to the head. Many of the breast feathers were matted with pine resin. The matted feathers had to be pulled loose in order to remove the bird from the cavity tunnel. I estimated the bird had been dead several days. The bird's getting stuck in the sap probably caused its death. The cavity tree was a Longleaf Pine (*Pinus palustris*), 24 m tall and 35 cm diameter breast high. Cavity height was 5.8 m. The cavity opening was partially grown over and the smallest I have seen (3.8 x 3.5 cm). This cavity had been used intermittently as a roost chamber at least since 1980, when this area was first surveyed.

Locke et al. (Bird-Banding 50:368-369) also reported a dead Red-cockaded stuck in cavity resin in Texas. Barnett et al. (Proc. Red-cockaded Woodpecker Symposium II, p. 110, 1983) reported a dead Red-bellied Woodpecker (*Melanerpes carolinus*) in resin at a Red-cockaded cavity in Florida. This unusual form of mortality, although certainly uncommon, may be more widespread than realized.

The specimen was deposited with the Clemson University Museum, Department of Biological Sciences (Accession Number CU 638).

Atypical Nest Site for a Prothonotary Warbler

DAVID S. LEE

MARY K. CLARK

North Carolina State Museum of Natural History
P.O. Box 27647, Raleigh, N.C. 27611

On 20 May 1985 we had the opportunity to examine an unusual nesting situation of a Prothonotary Warbler (*Protonotaria citrea*). An adult female bird was observed nesting

inside an inverted flat-bottom aluminum boat secured to Elwell's Ferry, which crosses the Cape Fear River near Kelly in Bladen County, N.C. The nest was approximately 1.3 m above the river, and the bird had a piece of moss in her beak when we first saw her sitting on the nest. Robert (Bob) Mitchell, the ferry operator, informed us that he had seen the bird gathering moss from the base of a Bald Cypress (*Taxodium distichum*) on the north side of the river near the ferry landing. During a follow-up visit on 18 June, we were informed that these birds had successfully fledged three or four young the preceding week. Because Prothonotary Warblers normally nest in small cavities, their nesting in such an atypical situation is interesting.

The nest was protected from adverse weather, and like many Prothonotary nests, it was over water. However, the "cavity" (boat) opening was so large that it is difficult to compare an inverted boat to any previously described nesting situation for this species. In the surrounding habitat on both sides of the river, we found Prothonotaries to be quite common in the cypress/tupelo swamp.

Mr. Mitchell informed us that Prothonotary Warblers had built a nest in the same spot the preceding year. When it became necessary to repair the boat, workers removed the nest, which contained young, and placed it at the base of a nearby cypress. Subsequently, grass-cutting crews moved the nest to a box placed at the ferry house, about 40 m from the original site. Throughout these moves the parents continued to care for the young, and they eventually fledged.

In both 1984 and 1985 the parents maintained a schedule of nest construction and parental care despite the irregular schedule of ferry crossings. As the ferry moved back and forth across the river, more than 100 m wide at the crossing, the birds, which always foraged on the north side of the river, continued to bring nesting material, to return to incubating eggs, and to feed dependent young. Adult birds returning to the nest would fly to the nest regardless of the ferry's location on the river. Birds were seen carrying nesting material and food from the swamp forest to the ferry, apparently unconcerned about its location or movement. This note documents a rather bizarre example of strong nest attachment and adaptability in parent passerines. We thank Bob Mitchell, Kelly, N.C., for bringing this nesting activity to our attention.

Spring Record of Clay-colored Sparrow for North Carolina

HARRY E. LeGRAND JR.
331 Yadkin Drive
Raleigh, N.C. 27609

J. MERRILL LYNCH
Route 7, Box 156
Raleigh, N.C. 27614

On the afternoon of 13 April 1985, we visited a large farm pond on SR 1618 about 3 air miles W of Halifax in Halifax County, N.C. We were observing a flock of about 25 White-crowned Sparrows (*Zonotrichia leucophrys*) in a thicket of willows and other shrubs near the shore of the pond. Among the White-crowned Sparrows were several Field Sparrows (*Spizella pusilla*), one or two Chipping Sparrows (*S. passerina*), and a bird that appeared to be a Clay-colored Sparrow (*S. pallida*). Many of the White-crowned Sparrows were singing, and among these songs we heard one consisting of several low buzzes, which we thought to be that of the Clay-colored Sparrow. After

about 5 minutes, we were able to observe the bird feeding on the ground at the edge of a thicket adjacent to an open field. We saw it, off and on, for several minutes, as close as 30 yards. The overall sandy, pale gray appearance was quite noticeable, and its unstreaked breast was whiter than those of the Field and Chipping Sparrows. The brownish auricular patch was distinctive, as were the dark malar stripe, the white superciliary stripe, and the white median crown stripe. Striping was very apparent on the sandy gray back. The bill was pale in color (not black), and the legs were pink. The color of the rump patch was not seen. In flight, the bird's shape resembled that of the Field Sparrow more so than that of the Chipping Sparrow because of the relatively long tail, and the flight call also resembled the *tsip* note of the former.

We have each seen Clay-colored Sparrows in the Carolinas on several occasions. The direct comparison of the above described bird with Field and Chipping Sparrows, the field marks observed, and the buzzing song heard leave us with no doubt as to the identification.

The Clay-colored Sparrow has been seen on numerous occasions in North Carolina in the fall and several times in winter; only a handful of these records are inland. However, there has been no acceptable record for the spring season. LeGrand observed one at Raleigh, for several seconds, on 9 May 1971 (Amer. Birds 25:723); but Teulings et al. (Chat 40:69-71) did not consider the record entirely satisfactory because of the brief viewing time. Two Clay-colored Sparrows were reported near Fayetteville on 18 May 1981 (Amer. Birds 35:814), but no details were provided. The Halifax County sighting appears to be the first in spring in the state observed by more than one individual as well as the first with numerous details provided.

Second Breeding Locality of Dark-eyed Junco in South Carolina

DOUGLAS B. McNAIR

Route 1, Box 324

Six Mile, S.C. 29682

A pair of Dark-eyed Juncos (*Junco hyemalis*) nested at Caesar's Head, Greenville County, S.C. in 1985. I discovered a family of five (adult pair and three juveniles) in the yard of T. Hendricks on 12 June, at an elevation of 915 m and approximately 300 m W of the rocky precipice of Caesar's Head in the Blue Ridge physiographic region. The habitat is mixed forest adjacent to brushy areas that enclose vacation homes situated along a ridge that faces south. The slope of the forest below is steep ($> 60^\circ$).

Dominant trees or shrubs of the forest surrounding the Hendricks home are White Pine (*Pinus strobus*), Canadian Hemlock (*Tsuga canadensis*), Flowering Dogwood (*Cornus florida*), and *Rhododendron* sp. Other major trees or shrubs present are Tulip Poplar (*Liriodendron tulipifera*), Mountain Laurel (*Kalmia latifolia*), *Quercus* sp., and Red maple (*Acer rubrum*). Dominant shrubs in brushy areas at or near the home are *Rubus* sp., *Sassafras albidum*, *Amorpha* sp., and Smooth Sumac (*Rhus glabra*).

The juncos spent most of the time feeding. Several young begged food from a parent, but these efforts were unsuccessful. However, both parents attended the young while the latter fed on the ground in the yard, and the female was more active than the male in this role. The male warned the juveniles and female of my approach, frequently

chipping at me from low perches (< 6 m) in the forest if I approached the juveniles too closely (< 10 m). The male occasionally left the family to sing in a shrubby area on the steep hillside about 45 m away from the homesite. These infrequent singing bouts lasted 1 to 3 minutes each.

Aside from singing, the male had darker plumage and was easily distinguished from the female (Eaton 1968). All three juveniles had streaked breasts. One juvenile had more pronounced blackish crown streaking than the others, which more closely resembled the adults.

Toward dusk, the family became active in the White Pines and hemlocks and eventually roosted in the hemlocks. I was not able to find any juncos when I returned to the site on 23 June.

Some other species present in the forest and shrubby areas within 75 m of the Hendricks home were: Great Crested Flycatcher (*Myiarchus crinitus*), Solitary Vireo (*Vireo solitarius*), Black-throated Blue (*Dendroica caerulescens*) and Hooded (*Wilsonia citrina*) Warblers, and Scarlet Tanager (*Piranga olivacea*).

I previously recorded a singing male junco at this same locality from 18 to 20 June 1983 (McNair 1984). I assume that the pair and three fledged juveniles in 1985 confined their breeding activities to South Carolina, because the North Carolina state line is several kilometers away. The only other known breeding locality in South Carolina is Sassafras Mountain, which is on the North Carolina state line (Hamel et al. 1980).

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BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1985 unless otherwise indicated)

RED-NECKED GREBE: Rare and early was an immature studied at close range for several hours at a pond 10 miles N of Columbia, S.C., on 15 October 1984 by Oscar LaBorde. Another was seen by Jackson Abbott and Perry Nugent at Moore's Landing near Charleston, S.C., on 9 March.

NORTHERN FULMAR: Dave Lee had a remarkable total of 215 fulmars on a pelagic trip off Oregon Inlet, N.C., on 27 March.

BLACK-CAPPED PETREL: Twenty were observed by Dave Lee off Oregon Inlet on 27 March; and Dennis Forsythe noted single birds 55 to 60 miles off Charleston on 28 April, 25 May, and 26 May.

AMERICAN WHITE PELICAN: An excellent North Carolina count was three seen on 7 March at Beaufort by Dave Colby. Another was seen at Sunset Beach, N.C., on 5 March by Philip Crutchfield and Jarvis Hudson.

GREAT CORMORANT: Adults are seldom seen in the Carolinas; thus, noteworthy was one in Charleston harbor on 2 March (Dennis Forsythe).

DOUBLE-CRESTED CORMORANT: The first nesting record for the piedmont of the Carolinas was reported by Kathy Kuyper in the spring at Jordan Lake in Chatham County, N.C. She saw three nests, with adults in attendance, in dead trees in the lake. Uncommon in the mountains were two cormorants near Dana in Henderson County, N.C., on 4 May (Simon Thompson party) and two at Thunder Lake in neighboring Transylvania County from 12 to 28 May (Norma and Bill Siebenheller). Good inland counts (all in North Carolina) were 41 near Fayetteville on 15 April (Philip Crutchfield), 40 at Jordan Lake on 9 March (Bill and Margaret Wagner), and 28 at Roanoke Rapids Lake, N.C., on 27 May (Harry LeGrand, Merrill Lynch).

ANHINGA: Unusual numbers appeared throughout the North Carolina coastal plain this spring. Records included two along Milltail Creek on mainland Dare County on 30 March and 11 May (Melinda Welton et al.), one on 31 March at Bear Creek in eastern Pitt County (Gene Huntsman), one on 15 April in western Fort Bragg (Jay Carter), up to four in April and May near Weldon (Randy Yelverton et al.), and a nest found at Dunahoe Bay in Robeson County in April (Dave Stephan, fide Tom Howard). Several sightings were reported from that state's Croatan National Forest, including 13 at Lake Ellis in mid-May (John Hagan).

AMERICAN BITTERN: One was seen on 9 March near West End in Moore County, N.C., by Dick Thomas.

GREAT EGRET: Well inland in spring were one seen on 19 April near Greensboro, N.C., by Don Allen and Herb Hendrickson and another (or the same) there on 30 May.

BLACK-CROWNED NIGHT-HERON: Migrants were seen in North Carolina at Fayetteville, Raleigh, and Jordan Lake, all during the first half of May.

YELLOW-CROWNED NIGHT-HERON: Rare in central North Carolina were single birds seen on 12 April near Hoffman (Dick Repasky) and at Raleigh on 4 May (Joshua Lee).

GLOSSY IBIS: Far inland was one seen by Charlie Wooten and Jim Sorrow at Clemson, S.C., on 21 April.

CANVASBACK: More than a month late were a pair that lingered near Raleigh to 4 May (Robert Hader et al.).

GREATER SCAUP: Four males and two females were seen near Pendleton, S.C., on 9 March by Charlie Wooten.

HARLEQUIN DUCK: Very rare for South Carolina were a female and an immature male seen by Heathy Walker at Huntington Beach State Park on 11 March.

RED-BREASTED MERGANSER: A good piedmont count was 60 at Jordan Lake on 14 March (Bill and Margaret Wagner).

BLACK VULTURE: Ron Warner saw one near Hendersonville, N.C., on 4 May. The breeding status of this species in the mountain region is unknown, though scattered sightings have been reported recently, mainly in neighboring Buncombe County.

OSPREY: Nesting occurred for the second consecutive year in the piedmont at Lake Townsend near Greensboro (fide Herb Hendrickson) and at Jordan Lake (fide Kathy Kuyper). Kuyper found three active nests at the latter site this spring, but apparently no young were fledged.

MISSISSIPPI KITE: An adult and a subadult were observed near the Roanoke River just southeast of Weldon, N.C., on 27 May (Harry LeGrand, Merrill Lynch). John Cely reported two nests at Webb Wildlife Center in Hampton County, S.C., during the summer.

BALD EAGLE: Melinda Welton discovered an active nest in North Carolina in Washington County in May; two young later fledged from it. The only other nest presently known to be active in that state (Hyde County) fledged three young, according to Welton.

- COOPER'S HAWK:** Individuals seen carrying food, a sign of nesting activity, were noted by Harry LeGrand and Kay Coburn near Weavers Ford in Ashe County, N.C., on 19 May and by Wayne Irvin just south of Raleigh on 6 June.
- BROAD-WINGED HAWK:** Henry Haberyan saw one in June along US 74, 20 miles W of Lumberton, N.C.; whereas Larry Crawford saw two at Morehead City, N.C., on 27 May and one there on 3 June.
- GOLDEN EAGLE:** Two immatures and an adult were carefully observed by Marcia and Miller Perdue in flight over Roan Mountain, N.C., on 26 May. Most sightings of Golden Eagles in the mountains occur in fall and winter.
- AMERICAN KESTREL:** Jay Carter found a nest (with two young and one egg) in an old Red-cockaded Woodpecker cavity on 16 May at Fort Bragg, near McCain, N.C.
- PURPLE GALLINULE:** An "overshoot" migrant was found dead at Bogue Inlet, N.C., on 27 April (John Fussell, Robert Hader, Ray Winstead).
- SANDHILL CRANE:** A first record for the Outer Banks was one seen in flight over Hatteras Inlet, N.C., on 6 April by Barb and Frank Haas.
- BLACK-NECKED STILT:** One was uncommon at Huntington Beach State Park, S.C., on 9 May (Evelyn Dabbs). Likely breeding were as many as four at a spoil pond on Eagle Island near Wilmington, N.C., from 27 April into June (Jeremy Nance).
- RUDDY TURNSTONE:** Very rare inland in spring were individuals seen by Charlie Wooten near Pendleton, S.C., on 8 May and by Herb Hendrickson near Greensboro on 18 May.
- LONG-BILLED CURLEW:** Along the South Carolina coast were one at Beaufort on 18 January (Bruce Krucke) and two at Fort Johnson near Charleston on 18 April (Perry Nugent).
- RED KNOT:** An outstanding total was a count of 8583 birds made by Perry Nugent at Folly Beach, S.C., on 28 April.
- SEMIPALMATED SANDPIPER:** One was seen, with three Least Sandpipers for comparison, by Ron Warner on 28 May near Asheville, N.C. Also on the same date, Charlie Wooten had a good piedmont count of 25 near Pendleton, S.C., with 10 more at nearby Clemson.
- WHITE-RUMPED SANDPIPER:** The best inland totals for the spring were seven at Roanoke Rapids Lake, N.C., on 27 May (Harry LeGrand, Merrill Lynch) and five near Pendleton on 24 May (Charlie Wooten).
- DUNLIN:** Single birds were found in northwestern South Carolina near Townville on 24 March and near Pendleton on 10 May (Charlie Wooten et al.).
- CURLEW SANDPIPER:** Very rare was one in breeding plumage observed by Jeremy Nance and Mark Galizio at Eagle Island near Wilmington on 18 and 19 May.
- STILT SANDPIPER:** Scarce inland was one seen by Charlie Wooten near Pendleton on 16 May.
- LONG-BILLED DOWITCHER:** One was studied by Jeremy Nance at Eagle Island on 28 April and 12 May. Though fairly numerous along the coast in fall, this species is apparently quite uncommon in spring; however, the spring status is still in doubt because of the difficulty in identifying the two dowitcher species.
- RED-NECKED PHALAROPE:** Jeremy Nance had a rare onshore phalarope, a female in breeding plumage, at Eagle Island, on 12 May.
- RED PHALAROPE:** A notable count, though not unexpected, was 840+ off Charleston on 2 March (Dennis Forsythe).
- LONG-TAILED JAEGER:** Always exciting was the discovery of two adults by Alan Spearman on a pelagic trip off Morehead City on 11 May. A few Parasitic and Pomarine Jaegers were also seen on this trip.
- COMMON BLACK-HEADED GULL:** Jackson Abbott saw one in first-winter plumage on 1 March at Kiawah Island, S.C.
- BONAPARTE'S GULL:** One was rather rare in the mountains at Thunder Lake in Transylvania County, N.C., on 29 March, as seen by Bill and Norma Siebenheller.

RING-BILLED GULL: A late bird was seen by Jim Boozer at Brevard, N.C., on 27 May.

BLACK-LEGGED KITTIWAKE: Dennis Forsythe observed immatures off Charleston on 10 and 16 March.

COMMON TERN: One was seen at a small lake at Brevard on 29 May by Ron Warner and Jim Boozer; however, it was found dead the next day.

FORSTER'S TERN: The only inland reports for the spring were one near Vass, N.C., on 28 April (Tom Howard) and two at Jordan Lake on 12 May (Ricky Davis).

RAZORBILL: The latest departing Razorbill ever for North Carolina was one seen on 27 March by Dave Lee off Oregon Inlet.

COMMON GROUND-DOVE: A rare inland vagrant was seen in a yard near Burgaw, N.C., on 18 May by Henry Haberyan.

BLACK-BILLED CUCKOO: Steve Murphy observed a very early cuckoo at close range near Franklin, N.C., on 19 April.

EASTERN PHOEBE: Oscar LaBorde found a nest under the eaves of his house about 10 miles N of Columbia, S.C., in May. The site is near the edge of the phoebe's breeding range.

GRAY KINGBIRD: A migrant was seen on Eagle Island near Wilmington on 18 May by Jeremy Nance and others.

CLIFF SWALLOW: A very large nesting population was found by Ken Beard in mid-May under two bridges on SC 391 at Lake Murray, S.C. About 300 nests, perhaps half of them active, were noted. A new nesting site for North Carolina was noted by Merrill Lynch and Harry LeGrand at Mayo Reservoir in Person County, where seven nests were counted on 23 May.

BROWN-HEADED NUTHATCH: The continued presence of the species in Buncombe County, N.C., was in evidence when Ron Warner saw one at Asheville on 2 May. Conclusive breeding has yet to be reported from this area.

BEWICK'S WREN: Quite unusual in spring were one seen and heard singing at Mount Pleasant, S.C., on 25 April by Charlie Walters, and two seen near Fayetteville on 10 April by Philip Crutchfield.

SOLITARY VIREO: One was singing on territory in late April and in late May in southeastern Chatham County, N.C., near Jordan Lake (Harry LeGrand).

PHILADELPHIA VIREO: Very rare in spring were vireos seen at Falls Lake on 28 April by Ricky Davis and near Raleigh on 4 May by Ken Knapp and Julie Stewart.

ORANGE-CROWNED WARBLER: Ricky Davis observed an extremely late bird on 28 May at Jordan Lake; the crown patch was seen at close range. A more seasonal record was one noted by Paul Hart at Crowders Mountain State Park, N.C., on 18 April.

NASHVILLE WARBLER: One of the rarest warblers in the Carolinas in spring, a Nashville was seen by Owen McConnell at Durham, N.C., on 28 April.

CAPE MAY WARBLER: Dorothy Foy banded an individual at Oriental, N.C., on 10 March.

BAY-BREASTED WARBLER: Scarce near the coast in spring was a singing male at l'On Swamp near Charleston on 28 April (Tom Reeves).

CERULEAN WARBLER: Simon Thompson reported a male at Warrior Mountain near Tryon, N.C., on 3 September 1984, and a male and a female were there on the following day. Two singing on territory were found by Ruth and Jerry Young during spring 1985 at Bull Creek Overlook, on the Blue Ridge Parkway northeast of Asheville.

SWAINSON'S WARBLER: Philip Crutchfield noted singing birds at two sites near Fayetteville in May. Though an uncommon species, it probably breeds in nearly every county in the coastal plain of the Carolinas.

MOURNING WARBLER: Extremely rare in spring was one seen briefly, but at very close range, by Paul Hart at Crowders Mountain State Park, N.C., on 24 May. The silent male had the black-colored bib and the lack of an eye ring that distinguished it from other species. Nearly as rare was a female seen on 30 May at Bent Creek, Buncombe County, N.C., by Ruth and Jerry

- Young. Both of these birds were undoubtedly migrants, but returning to the site where the species was found in summer 1984 was a male on territory on the Blue Ridge Parkway along the Swain-Jackson County line, N.C., during the summer of 1985 (Ruth and Jerry Young).
- SCARLET TANAGER:** Oscar LaBorde reported a pair, including singing male, from May to late June 1984 about 10 miles N of Columbia, S.C.
- BLUE GROSBEAK:** Rarely seen in the northern mountains of North Carolina was a singing male just east of Sparta on 19 May (Harry LeGrand and party).
- BACHMAN'S SPARROW:** Good counts, all of singing birds, were 13 in the Calabash, N.C., area on 21 April (Philip Crutchfield) and seven in southeastern Chatham County, N.C., on 5 May (Harry LeGrand).
- HENSLOW'S SPARROW:** Arrival dates, or at least the dates of first singing, of the newly discovered populations apparently breeding in eastern North Carolina are completely unknown. Two singing in a young pine plantation in central Brunswick County, where found in 1984, were observed on 20 April 1985 by Harry LeGrand and Kay Coburn.
- LINCOLN'S SPARROW:** One was extremely late in central Halifax County, N.C., where Frank Enders saw one at a leachate pool on 26 and 27 May. Others in central North Carolina were seen by Harry LeGrand and Merrill Lynch near Weldon on 14 April and by Ricky Davis near Butner on 28 April. Charlie Wooten saw two near Townville, S.C., on 14 April.
- WHITE-CROWNED SPARROW:** A good total of 25 was seen near Halifax, N.C., on 13 April by Harry LeGrand and Merrill Lynch.
- BREWER'S BLACKBIRD:** Charlie Wooten and Sidney Gauthreaux observed a female near Townville on 17 and 24 March.
- HOUSE FINCH:** Three young were fledged from a nest in a Sumter, S.C., yard this summer, fide Evelyn Dabbs.

RECORDINGS

COMMON BIRD SONGS

SONGS OF EASTERN BIRDS

SONGS OF WESTERN BIRDS

Donald J. Borror. 1984. Dover Publications, Inc, Mineola, New York. Each 50-minute cassette comes with an illustrated, 64-page booklet. \$7.95 each.

These cassettes are reissues of recordings Dover produced as LP records between 1967 and 1971. Each cassette has songs, and in some cases calls, of 60 species. All duplications between sets are justified by the markedly different vocalizations in the eastern and western populations. Species are treated in groups with similar songs, and several variations are given for many species. Although the birds on the tapes are primarily passerines, the goatsuckers and most of the eastern woodpeckers are represented. Owls are not included. The booklets are very helpful, particularly in the thorough descriptions of the vocalizations on the tapes. The organization of these tapes and the accompanying literature should make learning the common bird songs a pleasant and not particularly difficult experience. Even advanced bird students might benefit from hearing similar songs played one after the other rather than in the order the birds appear in the field guide.—EFP

BOOK REVIEWS

BIRD BEHAVIOR

Robert Burton. 1985. Alfred A. Knopf, New York. Illus. Index. 224 p. Hardcover, \$18.95.

This large-format book (10½ x 10½ inches) offers an overall survey of avian adaptation and behavior. It is beautifully and informatively illustrated with color photographs and occasional maps or other drawings. A 12-picture series presents the annual cycle of the European Starling, and another memorable series shows a Green-backed Heron using a fish-food pellet as a lure to catch fish. Most of the technical information reflects the current ornithological literature, though in a few cases papers published in major ornithological journals during the past 20 years have been ignored. For example, the author discusses dusting, anting, and sunbathing under the same heading and carefully avoids endorsement of the theory that birds ant to kill or dislodge feather parasites, but he does not even suggest a relationship between these three grooming behaviors and molting, which is the very next topic in Chapter 2. Burton's handling of the anting question is particularly surprising because another book by the same publisher (*Beyond the Bird Feeder* by John V. Dennis, Knopf, 1981) offers a balanced discussion of the subject. Burton also makes the statement that herons do not sunbathe, which is not true. Nonetheless, the photographs in *Bird Behavior* are so spectacular that the reader can forgive occasional slips in the generally well-prepared text. Listed among the contributing photographers are Roger Tory Peterson and CBC member Jack Dermid.—EFP

BIRDS OF THE NASHVILLE AREA

Henry E. Parmer and committee. 1985. Fourth edition. Nashville Chapter, Tennessee Ornithological Society, P.O. Box 24573, Nashville, Tenn. 37202-4573. 60 p. Softcover, \$4.

Originally compiled by the late Henry E. Parmer (1914-1985) and dedicated to him, the fourth edition of the Nashville, Tennessee, bird list was revised by a committee consisting of David F. Vogt (chairman), C. Gerald Drewry, Paul B. Hamel, and Stephen J. Stedman. The volume summarizes the occurrence of 306 species of birds in the nine-county region in and around the city of Nashville. Species accounts give the status for each season of the year and summarize nest records. Observers are cited for significant occurrences. The centerfold is a map indicating the geographic area covered and pinpointing the 27 sites described in a brief gazetteer of favorite places for bird watching. The committee added as an appendix a bar graph illustrating the period of occurrence for all 306 species. Anyone examining this book must be impressed by the large number of observers who contributed data, both published and unpublished, to the project, which is a real tribute to the ability and dedication of Nashville's amateur bird students. Groups planning to publish a local bird list would be well advised to study this one carefully while there is still time to adopt some of its best features.—EFP

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OFFICERS

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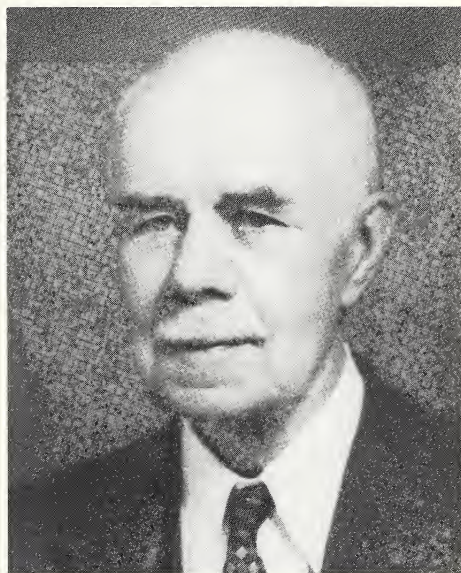
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1863-1946



HERBERT H. BRIMLEY
1861-1946



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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—*Chat* begins its 50th year of publication with an issue dedicated to the memory of H.H. and C.S. Brimley, both of whom served as president of the club during its first decade. (Photos courtesy of N.C. State Museum of Natural History)

H.H. and C.S. Brimley: Brother Naturalists

ELOISE F. POTTER

Late at night on 31 December 1880, two young men, recent immigrants from England, registered at the National Hotel across Edenton Street from the State Capitol in Raleigh, N.C. With them were their parents, Joseph and Harriet Brimley; two sisters; and one of two living brothers. The family had left the depressed agricultural economy of the village of Willington, Bedfordshire, expecting to find prosperity in the Sunny South described to them by an official of the North Carolina Department of Agriculture, Immigration and Statistics. Instead they found, in the words of H.H. Brimley, "unpaved streets, ruts hub-deep, frozen solid and covered with snow, and the temperature down mighty close to zero." Although there were some board sidewalks, the hotel lacked running water, and that in the pitcher on the washstand was frozen solid. The Brimleys pulled up the carpets and used them for blankets to keep from freezing that first night in North Carolina. Later they discovered that the public water supply came from wells under the sidewalks and that cows and hogs roamed the streets. "However," H.H. concluded, "there was a restless, pulsing air about the place and its people that impressed me" (Odum 1949).

After trying briefly to farm the rocky piedmont soil near Method, between what is now west-central Raleigh and Cary, H.H. turned to teaching in a one-room log schoolhouse near the present site of Meredith College. This venture also was unsuccessful, primarily because his English accent was not compatible with the southern drawl of his students (Cooper 1979).

Although not blessed with much in the way of formal education or worldly possessions, Herbert Hutchinson Brimley and Clement Samuel Brimley were endowed with incredibly inquisitive minds. Immediately upon their arrival in North Carolina, they began studying the wildlife, especially the birds, as they had done earlier in England. Sometime in 1882 or 1883, they acquired a 50-cent book entitled *Taxidermy Without a Teacher* and began experimenting with mounting and modeling animals. Soon they were businessmen, "Brimley Bros., Collectors and Preparers." While catering to the wealthy men in big cities who prided themselves on having large collections of bird skins and eggs, the Brimley brothers set their lives upon a course that would greatly enrich the knowledge of zoology in North Carolina and strongly influence several generations of young scientists.

In 1881 the N.C. Department of Agriculture, having outgrown its space in the Briggs Building on Fayetteville Street, purchased the old National Hotel for use as an office building. The department had been founded on 12 March 1877, and Leonidas Lafayette Polk, the first commissioner of Agriculture, almost immediately established a museum to display the agricultural products of the state. Since 1875 the Briggs Building had also housed the Geological Survey and the mineral collection maintained by Washington Caruthers Kerr, state geologist. This had often been referred to as the "geological museum" or the "state museum." The mineral cabinet, founded upon instructions from the General Assembly by Kerr's predecessor, Ebenezer Emmons, dated from at least the mid-1850s. First placed on display in the State Capitol, the

mineral cabinet was transferred to the Department of Agriculture on 20 February 1879, when the legislature required the commissioner to keep a "museum or collection to illustrate the agricultural and other resources and the natural history of the State." Thus the North Carolina State Museum was founded as part of the N.C. Department of Agriculture and remains so to this day.

When the time came to move the Agriculture Department into the former National Hotel building, the museum was assigned part of the space for its displays and collections, including remnants of exhibits the Board of Agriculture had sent to various expositions in this country and abroad. As the time approached for the 1884 State Centennial Exposition at Raleigh, the Board hired H.H. Brimley to mount a series of fishes for display, and he also made a collection of waterfowl from Currituck Sound (see "Old Times on Currituck" in *North Carolina Wildlife Conservation*, March 1943).

Although the Brimley brothers founded their taxidermy business primarily, as H.H. put it, "to keep the justly celebrated wolf from the not-too-securely fastened door," the partnership gave them a marvelous opportunity to collect and study the animals of North Carolina, about which very little had been published at that time. The year 1884 marks not only H.H.'s first employment by the Department of Agriculture but also the Brimley brothers' first contribution to the North American scientific literature, "Notes from middle North Carolina," which appeared in Volume 9 of *Ornithologist and Oologist*.

When planning for North Carolina's participation in the great World's Columbian Exposition of 1893, the State World's Fair Commission selected H.H. Brimley to collect and prepare native animals for display. He assembled and installed the Fish and Fisheries Exhibit, including appropriate aquatic birds, and remained in Chicago throughout the exposition. By legislative direction, the voluminous and valuable collections were, upon their return to Raleigh, deposited amid the already overcrowded and unusable jumble at the State Museum. The clutter included the disassembled bones of a Right Whale known as "Mayflower." In an attempt to improve the situation, the Board of Agriculture in 1894 engaged H.H. Brimley for the task of articulating and mounting the 46-foot skeleton, which now hangs in the front lobby of the State Museum. Because the budget lacked funds for such services, Brimley was hired for 3 months as a "fertilizer inspector."

On 15 April 1895, the State Museum entered a new era when H.H. Brimley was appointed its first full-time curator and sole employee. As he wrote later, "I became expert with a feather duster and pushed a wicked carpet sweeper! I had no funds beyond my princely salary of \$75 per month." Not yet employed by the Department of Agriculture, C.S. continued to operate the taxidermy business and was sometimes assisted by his older brother on a part-time basis until 1907 or 1908, when the growing museum demanded all of H.H.'s energies. By that time the museum occupied the entire second floor of the Agriculture Building plus two annexes, one added in 1893 and another in 1897. The staff had grown to three with the addition of an assistant curator, Tom Adickes, and a janitor, Bob Alston. By 1900, Curator Brimley was able to report holdings of "more than 100,000 specimens illustrative of North Carolina."

H.H. collaborated with Hugh M. Smith in preparing the 1907 volume, *Fishes of North Carolina*, published by the N.C. Geological and Economic Survey. Between 1900 and the beginning of World War I, much of Curator Brimley's time was spent

preparing displays for expositions: the Charleston Exposition (1901), the Louisiana Purchase Exposition at St. Louis (1904), the Boston Food Fair (1906), and the Jamestown Exposition (1907). He was selected as a member of the International Jury of Awards at both the St. Louis and Jamestown expositions, and he was appointed Executive Commissioner to the Panama Pacific Exposition, which was to have been held in 1915 but was canceled because of the war.

In 1914 the Hall of (Human) History, which had become a part of the State Museum in 1894, was transferred to the N.C. Historical Commission. Three years later, a new suite of offices and service rooms was added to the Museum of Natural History.

Although an obsessive hunter and fisherman, H.H. was also an outspoken conservationist and advocate of wildlife protection. He worked hard to convince the legislature to replace the confusing array of local statutes with strong, well-enforced state laws. It was only natural that H.H. would become the friend and ally of T. Gilbert Pearson, founder of the North Carolina Audubon Society and later president of the National Association of Audubon Societies (1920-1934). In the early 1900s Pearson and the Brimleys collaborated on the writing of one of the first state bird books ever produced in the South, *Birds of North Carolina*. Printed and ready for binding in 1913, the signatures were destroyed by a fire in the printing plant. The work, published by the N.C. Geological and Economic Survey, finally appeared, with additional notes, in April 1919.

Pearson and both the Brimleys often expressed themselves in poetry. C.S. was noted for his extemporaneous verses. H.H. and Pearson enjoyed going afield together, and their correspondence is filled with the kind of irreverent humor that can be exchanged only by those who truly admire and respect each other.

In December 1919, C.S. Brimley entered the service of the N.C. Department of Agriculture's Division of Entomology to take charge of the "Insect Survey" he and Franklin Sherman Jr. (North Carolina's first state entomologist in 1900) had been working on since the turn of the century. Sherman, as C.S. later wrote, "revived my long flagging interest in insects." This revival produced numerous scientific papers and, ultimately, *The Insects of North Carolina*, written by C.S. Brimley and published by the N.C. Department of Agriculture in 1938. Other workers on the "Insect Survey" through 1925 were J.C. Crawford, R.W. Leiby, C.L. Metcalf, Z.P. Metcalf, T.B. Mitchell, and M.R. Smith (Cooper 1979).

The former National Hotel building was demolished in 1922 so a modern Agriculture Building could be built on the site. The enlarged museum reopened there on 17 August 1925. In 1928 H.H.'s title was changed to director, and in 1934 he, with only 8 years of formal education, was elected to full membership in the American Ornithologists' Union, thus becoming one of the select assemblage of 150 nationally recognized bird students. H.H. remained director of the State Museum until 1937, when he was succeeded by Harry T. Davis; but in retirement Brimley served as the museum's curator of zoology.

H.H. and C.S. were among the founders of the North Carolina Academy of Science, Raleigh Natural History Club, Raleigh Bird Club, and the North Carolina Bird Club. C.S. was, at the time of his death, the only person without a college degree ever to serve as president of the N.C. Academy of Science. On 6 March 1937 he was elected the first president of the N.C. Bird Club, now Carolina Bird Club. The following year



H.H. Brimley puts the finishing touches on a Glossy Ibis mount at the N.C. State Museum, March 1942. (NCSM photo)

he, with a formal education perhaps equivalent to completion of one year of college, received an honorary degree of Doctor of Laws from the University of North Carolina in recognition of his many contributions to the natural sciences.

During his years as director emeritus, H.H. collaborated with C.S. Brimley and T. Gilbert Pearson on the 1942 edition of *Birds of North Carolina*, wrote many articles for *The Chat*, served as president of the North Carolina Bird Club (1942-1944), and continued to prepare specimens and models for the museum, including a 75-pound Channel Bass, a 594-pound Blue Marlin, and the True's Beaked Whale skeleton and models (mother and fetus) put on display in 1943. Throughout his career H.H.



C.S. Brimley studies insects through a microscope at the N.C. Department of Agriculture, July 1942. (NCSM photo)

participated in civic and professional organizations. He served as president of the Raleigh Rotary Club and was active in Boy Scout work. He rarely missed the annual meetings of the American Association of Museums, where in 1929 he gave a presentation, later published in *The Museum Years* (November 1930), on obtaining, preparing, and mounting whale skeletons. He also belonged to the Museums' Association of Great Britain, American Society of Mammalogists, and American Museum of Natural History.

Of the two Brimley brothers, C.S. was the more prolific writer and the more scientifically oriented. For more than 60 years, he kept remarkably detailed records on

the flora and fauna of the Southeast, and he published more than 150 popular and scientific papers in the fields of entomology, herpetology, ichthyology, ornithology, and mammalogy. His publications reflect his fascination with small animals—insects, other invertebrates, frogs, toads, salamanders, and wood warblers (Potter and Lee 1981). H.H., on the other hand, liked the big animals—ducks, geese, gulls, terns, herons, pelicans, hawks, owls, deer, whales, sharks, and game fish. His taste may have been shaped, at least in part, by the sense of showmanship required for designing good exhibits. H.H. was among the first museum preparators to place mounted animals in natural settings. Some of his work is preserved in the Brimley Room and elsewhere in the N.C. State Museum. His model of the 1200-pound Ocean Sunfish (*Mola mola*) remains one of the museum's most popular exhibits.

Although the Brimleys are most closely associated with Raleigh, the State Museum, and the Department of Agriculture, their influence spread throughout the state. At the invitation of C.A. Schenck, director of the Biltmore Forest School, C.S. Brimley prepared a series of lectures on zoology for presentation to the students there. The outline was later published by the school (Brimley 1913). H.H. was an honorary member of the Zoology Field Club, a students' organization at the Woman's College of the University of North Carolina (now UNC-Greensboro). Each spring for nearly 20 years, H.H. and Mrs. Brimley went to Greensboro for his annual talk. After Archie D. Shaftesbury founded the Woman's College Marine Laboratory at Beaufort, H.H. Brimley and T. Gilbert Pearson made frequent summer visits, leading activities such as visits to heronries and offshore boating trips. Following one such visit, Uncle Gilbert



T. Gilbert Pearson, Mrs. Pearson, H.H. Brimley, and Bessie Love Brimley enjoyed fishing trips together. This undated photograph appears to have been taken in the late 1930s. (NCSM photo)

wrote a poem called "The Dreamer," dedicated to H.H. Brimley, and sent it to the students at the laboratory. This poem, which teases H.H. for preferring hunting to office work, was published on the inside back cover of *The Chat* (May 1946).

Colleagues showed their esteem for H.H. and C.S. Brimley by naming animals for them. These include the fish *Notropis brimleyi*, the frog *Pseudacris brimleyi*, the salamander *Desmognathus brimleyorum*, two millipeds, and several hymenoptera. C.S. described several new species and subspecies of Southeastern herpetofauna, but only two of these, *Necturus lewisi* and *Pseudotriton ruber schencki*, have stood the test of further taxonomic studies (Cooper 1979).

Both H.H. and C.S. Brimley continued to collect and publish the results of their field work until shortly before their deaths less than 4 months apart in 1946.

H.H., who was born on 7 March 1861, died at Rex Hospital in Raleigh on 4 April 1946 at age 85, following more than 60 years of service to the State Museum. He was survived by his second wife, the former Bessie Love; two sons, Arthur H. Brimley of Asheville and Robert E. Brimley of Charlotte; one brother, Clement S. Brimley, assistant state entomologist; and one granddaughter, Miss Mary Ellen Brimley of Charlotte. The funeral service was held at Christ Episcopal Church of which he was a member. A fitting requiem was added to the service at the graveside by the calls of Blue Jays, his special favorite among the birds (Shaftesbury 1946a).

Bessie Love Brimley, who shared H.H.'s love of fishing, reared the two sons of his first marriage to Edith Taylor, a member of one of several English families who came to North Carolina about the same time the Brimleys did. Bess was also instrumental in persuading Eugene P. Odum, one of the many young zoologists influenced by H.H. and C.S. Brimley, to collect her late husband's writings for publication by the University of North Carolina Press. *A North Carolina Naturalist: H.H. Brimley* appeared in 1949. Bess remained active in Carolina Bird Club until her death on 17 November 1950 (Anon. 1951).

H.H., C.S., and their brother Fred, who remained in England when the family emigrated, all attended the Bedford County School at Elstow, the old home of John Bunyan, just outside Bedford. In an affectionate tribute to his brother, C.S. Brimley (1946) wrote: "Herbert did well in sports, particularly football and swimming. In his studies he distinguished himself in mathematics but not much in other subjects due I think to a lack of interest, not to lack of ability. After he left school both he and Fred took clerical jobs at Howard's Iron Works in Bedford, but indoor work did not suit H.H. . . . Both Fred and he rode bicycles and H.H. won prizes at several local meets. These were the old high bicycles with a very small hind wheel and a very high front one throwing the center of gravity far forward, so that if the front wheel struck the slightest obstacle it was apt to cause the bike to revolve on its axis throwing the rider head first on the hard road.

"He and I collected bird eggs in an amateurish way. . . . Our three great finds were a nest and eggs of the Golden-crested Wren in Sheerhatch wood, one of the Long-tailed Tit in the Spinney, and a set of three eggs of the Mute Swan taken on an island in the River Ouse. As a swan was assumed to be a tough customer, the party of three, H.H. and two friends went along well armed for a swan was supposed to be able to break a man's leg with one blow of its wing. However, the expedition came off safely. The swans bluffed a little, but the eggs were secured without difficulty and divided equally

among the lucky three. In later years we have often collected all sorts of things in company with one another. He was a good man and a pleasant companion. Even to the end there was a kind of elder brother-younger brother relationship between us."

C.S., who was born 18 December 1863, died at his home in Raleigh on 23 July 1946. He was survived by his wife, the former Annie Roberts of Johnson County, N.C.; two sons, First Lieutenant Ralph Brimley, U.S. Army, Washington, D.C., and Edwin Brimley of Orlando, Florida; and three grandchildren. Funeral services were conducted by the Rev. M.O. Sommers, pastor of the First Presbyterian Church, and burial was in Oakwood Cemetery, Raleigh (Shaftesbury 1946b).

Harry T. Davis served as director of the N.C. State Museum until his retirement on 1 July 1966. The third director was William L. Hamnett, who was followed on 1 July 1974 by the present director, John B. Funderburg Jr. Although the museum remains in the annex to the Agriculture Building, it is today quite different from the way it was in the 1940s. The rear portion of the museum building was rebuilt between 1952 and 1954, and the front portion in 1965. In 1975 a completely new heating, ventilating, and air conditioning system was installed, and one opening in the floor of the mezzanine was closed to provide additional exhibit space. The North Carolina Maritime Museum, formerly called the Hampton Museum, at Beaufort, N.C., came under the administration of the State Museum on 20 June 1959. A new building for this facility was dedicated in May 1985. The State Museum acquired two floors of the Old Health Building for offices and scientific collections. Renovations were completed in early 1985, but a shortage of space remains a major problem. In the summer of 1985 the front lobby was renovated to enlarge the Tail of the Whale bookstore and gift shop, to provide an open area for receiving large groups of visitors, and to afford a better view of the Right Whale skeleton.

The museum, which serves approximately 300,000 visitors per year, was accredited by the American Association of Museums in 1979, and plans are being made for a new wing on the present building and a science education center on Blue Ridge Road. At present there are 30 full-time employees, several part-time employees, and numerous volunteers engaged in scientific research, publications, educational services, and preparation and maintenance of exhibits. The North Carolina State Museum of Natural History is a lasting, growing memorial to the Brimley brothers, and its scientific journal, *Brimleyana*, is named in honor of these two distinguished naturalists.

ACKNOWLEDGMENTS

The North Carolina State Museum of Natural History provided access to documents and photographs that were very helpful in preparation of this biographical sketch. John B. Funderburg Jr., Roxie C. Laybourne, and David L. Wray shared some of their personal recollections of the Brimley brothers. In addition, Dr. Funderburg read an early draft of the manuscript. I am grateful for all the help I have received.

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H.H. Brimley worked in a taxidermy laboratory that has been reconstructed at the N.C. State Museum as part of the Brimley Room. This exhibit, funded by the Raleigh Woman's Club, preserves many of his best works in the lovely golden oak display cases originally made especially for them.

Backyard Birding

... with Gail T. Whitehurst

Birdsong Fun

In the Fall 1985 issue of *Chat*, we discussed the value of knowing the songs, scold notes, and flight calls of birds as an aid in locating and identifying birds. Now we would like to suggest to our readers, especially the young and young at heart, that with some imagination, you can find bird songs full of popular tunes, interesting phrases, and downright comical sentences. You just might add a touch of spice to those otherwise dull backyard duties such as pulling weeds, pruning the hedge, or picking beans in the garden.

For instance, this summer there was a Northern Cardinal in our backyard who sang loudly, "cheeseburger, cheeseburger." In light of the fact that there are at least three fast-food hamburger outfits within less than a mile, I wonder which one was paying him to advertise. He must not have made much, for he soon switched to "cheerburger" and then just said, "cheer, cheer." As far as I know, there are no cardinals in England, but this bird, and others I have heard over the years, frequently call out, "British people, British people!" Perhaps they were allied with the British redcoats during the American Revolution.

Song Sparrows are known to have an immense repertoire of phrases, most of which are quite beautiful to the human ear. Among those frequenting my yard this summer was one whose song tune was quite plainly, "Someone's in the kitchen with Dinah." Another song, from a different bird, sounded to me like, "What now, my love?"

We have had much fun with the songs and phrases of Carolina Wrens over the years. In Raleigh, we had a couple of singing male wrens that I referred to as the "Religious Wrens." Why? Because one of them would call out, "Saint Peter, Saint Peter." The other, from across the way, would respond, "Saint Peter, Saint Peter, *Sir!*" It appeared as though the first wren was being chided by the second wren for being disrespectful. Here in Asheville, we have a wren that often throws in "bishop, bishop," as he runs through his pattern of song. The fun comes sometimes when a certain phrase accompanies the activities of another bird. We know that the bird does not really relate to the situation at all, but the effect can be very comical. Once I was watching a pair of Brown-headed Nuthatches digging a hole in a low fence post (one quite accessible to a cat). While they were busily engaged in this activity, a Carolina Wren flew close and perched nearby. After observing the nuthatches for a moment or two, he threw back his head and sang out, "Pretty stupid, pretty stupid."

Starlings, which everyone prefers to ignore, can come up with some fairly good imitations of other birds. They also have quite an assortment of grunts, cackles, and whistles. I recall one time when, dirty and disheveled from cleaning house, I stepped outside and was greeted by a long, loud wolf whistle from a European Starling. Although I have heard them do this often, the timing was so perfect that I could not help but laugh.

The flycatchers, many of which can be safely identified only by their songs, come up with some fun phrases, too. The Acadian, even in the deepest woods, seems to be calling for "pizza." The time I heard the Olive-sided Flycatcher, he was saying, "Whip three beers." The Alder reportedly offers "free beer."

The Brown Thrasher is a mimic as is his cousin, the Northern Mockingbird. Personally, I think the thrasher's songs are much more melodic—and he doesn't pick up a new sound and harp on it all day long, as does the mocker. In *The Audubon Book of True Nature Stories*, edited by John K. Terres, there is a story about a thrasher that actually learned to talk. He had an extensive vocabulary of some 70 words and phrases. At the time I first read this story, there was a fairly tame Brown Thrasher at our place. I named him "Pretty Bird," and he would come for handouts when I called him by name. I started saying his name over and over whenever he was around—but he gave no vocal response, just making off with the food. But some weeks later, in early fall, I spied him in a hedge. He was singing his songs in a soft whisper—and it was a very lovely medley. Suddenly, he injected the phrase, "Pretty bird, pretty bird." Then he flew away, as if to say, "See, I can talk, if I want to." I never heard him do it again.

A number of birds say their names. In addition to pewee and towhee, there are chickadee and phoebe. I think the Brown-headed Nuthatch says "nuthatch, nuthatch," with the emphasis on "nut." Most everyone agrees that the Blue Jay yells "Jay, jay."

The Brown Creeper, whose song is difficult to hear, being weak and high-pitched, says "see, see, see." He may be inviting us to look and see, but that is more easily said than done as he creeps up the trunk of a tree or along its branches, his color blending with the background.

If you have some pet phrases for wild birds or stories about their calls and songs, won't you share them with us? Perhaps you can help others in locating and identifying a new bird.—GTW

BRIEFS FOR THE FILES

(Continued from page 27)

species is now nesting as far east as Williamston, N.C., where Ed Torrence saw an adult pair at a feeder with three young during the summer.

PINE SISKIN: Ramona Snavely noted four at her Winston-Salem feeder until 9 June, a very late date for the piedmont. In the mountains, one was present at Ruth Young's feeder in Fairview from 21 June to 31 July; and Norma and Bill Siebenheller reported many siskins in Transylvania County, N.C., this spring, some in courtship chasing. Siskins have never been confirmed to breed in the southern Appalachians, though they likely do so (at least occasionally).



Roundtable

... with Louis C. Fink

Adopt-A-Tern-Nest Project

Under the leadership of Greg Cornwell, the Waccamaw Audubon Society initiated an Adopt-A-Tern-Nest Project in order to monitor the birds nesting on the roof of the Harris-Teeter grocery store in Surfside Beach, S.C. The following report summarizes activities for the 1985 nesting season.

With the help of 35 nest sponsors, Cornwell and his assistant Deb Sue Griffin were able to monitor 55 Least Tern nests from May to August. The marking of nests began on the third of May when 17 nests were identified by fist-sized pebbles numbered with fingernail polish. Terns were involved in courtship, mating, and nest building well into the first week of July when the last of 93 eggs were laid.

Chicks first hatched in late May, following an incubation period of approximately 23 days. Of the 93 eggs laid, 5 eggs never hatched. Seventy-four chicks were banded with U.S. Fish and Wildlife Service bands. Most of these birds were observed until their permanent departure from the roof. Eleven chicks died before being banded.

In the 1984 breeding season, numerous chicks died when they fell off the rear of the roof. To help solve this problem in 1985, a piece of hardware cloth or wire 8 inches high by 4 feet long was laid near the corner edges of the roof. The wire made a curve that directed the terns away from the edge. The wire was very effective and reduced the number of "jumpers" to only two chicks after installation. These birds died from the fall.

Late May and early June were particularly hot months in 1985. Temperatures in the 90s caused both chicks and adults to pant or "gullar flutter." By mid-June, six chicks were dead on the roof. There were no apparent causes of death, other than dehydration. Special care was taken not to disturb the colony during the hot periods.

The hot, dry weather was broken by heavy rain on 24 July when Hurricane Bob passed by the coast. Fortunately, by this date most of the chicks had left the roof. However, following the storm two chicks and two adult birds were found dead. Two other adults were found dead during the breeding season. The cause of their deaths could not be determined.

No signs of predation were observed on the roof in either 1984 or 1985. It would appear that the roof is relatively safe from predators. The possibility of owl predation

will be investigated in 1986. Terns were observed escorting crows from the airspace above the roof.

The increase in the number of nests from 46 in 1984 to 55 in 1985 and the increase in the number of chicks banded, indicate that the colony is doing well. However, many questions still remain unanswered. These include the following: Why did the terns pick the grocery-store roof when there are many other roofs closer to the beach and marshes? What were their selection factors? Minimum roof size, distance from fishing areas, roof texture and color, and many other factors could influence their selection. Or, could they somehow "realize" how safe they would be from predators and spring tides if they nested on the roof?

Another question of importance may be answered next spring. That is whether or not chicks banded in 1984 will return as adults to nest on the same roof. Banding data will identify these birds.

With the help of Adopt-A-Tern-Nest Project sponsors in 1986, we shall continue to monitor the progress of the Least Terns. Mr. Hopkins, manager of Harris-Teeter grocery store, and his assistant, Mr. Brown, deserve special thanks for their assistance.—GREG CORNWELL, 406 Brook Glenn Road, Taylors, S.C. 29687.

Newspaper Gleanings

Michigan is trading 150 wild turkeys to Ontario for 30 moose. *** A wild eagle was fitted with a transmitter in TVA territory in Tennessee, but the backpack was too heavy and the bird was released. *** In Boston, joggers were attacked by birds. Five of the joggers said the birds were "European buzzards"; seven joggers could not identify the birds.

In Pensacola, Florida, a Caribbean Elaenia was seen for the first time in the United States. When the sighting was reported to the Florida Ornithological Society banquet in St. Petersburg, the banquet broke up as everyone hurried off to see the bird.

The Ivory-billed Woodpecker, placed on the Endangered Species List in 1967, has had no confirmed sightings in 20 years. So says the Fish and Wildlife Service. Only five Florida Dusky Seaside Sparrows are left, and they are all male. The interior population of the Least Tern is down to about 1,500 birds. On the bright side, the Whooping Crane can be numbered in the hundreds, instead of its low point of 15 birds a few years back.

Cornell University has shipped 54 Peregrine Falcons to the World Center for Birds of Prey at Boise, Idaho, in hopes of breeding more birds for release in Eastern States. A Gyrfalcon born in captivity would be used to help incubate Peregrine eggs. British authorities seized several Northern Goshawks at Heathrow Airport. They had been smuggled in from the United States.

CBC Rare Bird Alert Phone Number
704/875-2525

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

First Piedmont Record for Red Phalarope in South Carolina

CHARLIE W. WOOTEN

Department of Biological Sciences
Clemson University
Clemson, South Carolina 29634-1903

On the afternoon of 2 May 1985, I saw a Red Phalarope (*Phalaropus fulicaria*) on a small farm pond at the Simpson Experimental Station of Clemson University, Anderson County, S.C. The pond is approximately 4.2 km SE of Pendleton. I saw the bird just after the passage of a major storm system. Surface winds were from the SSE and winds aloft from the SSW. The bird was first spotted swimming approximately 8 m from the shoreline of the 0.6-ha pond. Other shorebirds on the pond were Killdeer (*Charadrius vociferus*), Greater and Lesser Yellowlegs (*Tringa melanoleuca* and *T. flavipes*), and Solitary and Least Sandpipers (*T. solitaria* and *Calidris minutilla*). I approached within 5 m of the bird without flushing it. I identified the bird as a phalarope by its relatively small size, gray and white plumage, and swimming behavior. The following field marks were noted through 7 x 35 binoculars and a 20X spotting scope. The plumage was generally gray on the dorsal surface and white on the ventral surface, suggesting an individual in nonbreeding plumage. Some of the scapulars had a pinkish tinge, but this depended on the angle of observation. The bird had a black line through the eye to the back of the head, and the posterior surface of the crown was dark. The bill was short in relation to the bill of a Lesser Yellowlegs (direct comparison) and was noticeably thicker and blunt-tipped. The basal half of the bill was yellow, changing to black distally. The short legs were gray to grayish-blue, and the bird had a "squat" appearance on land. When the bird flushed, I noted two bold stripes on the wings and an unmarked back. The bird remained in the water the majority of the time it was seen and rarely left the water when it foraged on the shoreline. The bird also fed on dead emergent vegetation.

Red Phalaropes are regular transients off the coast of North and South Carolina, occasionally in very large numbers (Lee and Booth 1979; also Chat 45:106, 46:119, 47:108, 48:99). They also winter regularly in the Gulf of Mexico (Imhof 1962) and along the south Atlantic Coast (Amer. Birds 38:307, 39:158). However, inland records for both Carolinas and Georgia are few, and most of these records are near the coast. Sprunt and Chamberlain (1970) list four inland records for South Carolina all from locations near the coast. Two of these records were in the fall and two in the spring. In

North Carolina, extreme inland records include birds at Fontana Village in Graham County (Chat 13:75), Lenoir in Caldwell County (Wray 1947), and North Wilkesboro in Wilkes County (Smith 1960); all other records are from the lower piedmont and coastal plain (Marsh and Hader 1974; Chat 43:72, 45:50, 47:52 and 53, 48:58). All of these records except one have been in the fall and winter. A bird was sighted near Atlanta, Georgia, in the fall of 1981 (Bevis 1981). My record of a Red Phalarope from Pendleton, S.C., is the first report for the piedmont region of South Carolina, and one of the few inland reports in spring from both Carolinas.

Acknowledgments. I thank S.A. Gauthreaux Jr. for discussion regarding the occurrence of this bird and for helpful suggestions on the manuscript.

Records from "Briefs from the Files" published in *The Chat* and "South Atlantic Coast Region" in *American Birds* are not included in the literature citations.

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The Number of Fault Bars in the Feathers of Red-tailed Hawks, Red-shouldered Hawks, Broad-winged Hawks, and Barred Owls

ELIZABETH J. HAWFIELD

Department of Biology

Winthrop College

Rock Hill, S.C. 29733

J.E. Cooper (1978) claims that malnutrition or other stressful factors during feather growth can produce weak areas in the feathers called fault bars. He explains that fault bars occur in a number of species of free-living birds of prey. Evans (1960) points out that fault bars appear as slightly frayed, defined lines that sometimes extend across the entire vane. Fault bars weaken the feathers on which they occur, making the feather easier to break. Hamerstrom (1967) and Glasier (1978) note that, because fault bars are formed at the time the feather is growing, fault bars found across the entire tail at an equal distance from the base indicate that all the feathers were growing at the time the animal was subjected to stress.

TABLE 1. Percentages of primaries and rectrices with heavy fault bars.^a

Species	No. of Feathers Examined		Percent with Heavy Fault Bars	
	Primaries	Rectrices	Primaries	Rectrices
Barred Owl (N = 17)	322	184	14%	18%
Red-tailed Hawk (N = 26)	506	295	7%	20%
Red-shouldered Hawk (N = 16)	314	188	4%	13%
Broad-winged Hawk (N = 8)	159	90	7%	22%

^aTotal number of primaries and rectrices minus lost or broken feathers

TABLE 2. Percentages of birds with heavy fault bars on primaries and rectrices.

Species	Age	N	Percent of Birds with Heavy Fault Bars	
			Primaries	Rectrices
Barred Owl	Adult	16	94%	94%
	Juvenile	1	100%	100%
Red-tailed Hawk	Adult	10	50%	60%
	Juvenile	16	69%	87%
Red-shouldered Hawk	Adult	10	20%	60%
	Juvenile	6	69%	87%
Broad-winged Hawk	Adult	3	33%	33%
	Juvenile	5	100%	80%

If fault bars occur frequently in raptors, they may be useful as indicators of past stressful conditions. In a preliminary effort to determine the relative frequency of occurrence of fault bars, adult and juvenile museum specimens of Red-tailed Hawks (*Buteo jamaicensis*), Broad-winged Hawks (*B. platypterus*), Red-shouldered Hawks (*B. lineatus*), and Barred Owls (*Strix varia*) were examined.

I examined 26 Red-tailed Hawk, 8 Broad-winged Hawk, 16 Red-shouldered Hawk, and 17 Barred Owl study skins from the North Carolina State Museum of Natural History. All primaries and rectrices were inspected for the presence of fault bars.

I placed each specimen ventral side up on an overhead projector. The primaries and rectrices were carefully separated and examined for the presence of fault bars. Fault bars were classified as faint or heavy. Heavy bars could be observed without light from the

TABLE 3. Mean number of fault bars per bird.

Species	Age	N	Mean No. Fault Bars Per Bird ^a	
			Rectrices	Primaries
Barred Owl	Adult	16	2.7 ± 2.7 (0-9)	3.0 ± 4.2 (1-17)
	Juvenile	1	1.0	6.0
Red-tailed Hawk	Adult	10	2.9 ± 3.2 (0-9)	0.8 ± 1.0 (0-3)
	Juvenile	16	3.4 ± 3.2 (0-10)	1.8 ± 2.9 (0-12)
Red-shouldered Hawk	Adult	10	1.0 ± 1.0 (0-3)	9.4 ± 0.9 (0-3)
	Juvenile	6	4.5 ± 4.2 (0-10)	2.1 ± 2.6 (0-7)
Broad-winged Hawk	Adult	3	3.0 ± 5.1 (0-9)	0.3 ± 0.5 (0-1)
	Juvenile	5	2.8 ± 2.1 (0-6)	2.6 ± 2.0 (1-6)

^amean ± SD (range)

projector; faint fault bars were best distinguished with the extra light source. Broken or missing feathers were subtracted from the total number of primaries or rectrices before calculations were made.

Because of small sample sizes, data from the three species of hawks were combined. Heavy fault bars occurred more frequently in the rectrices of juvenile hawks than in those of adults, but the difference was not significant: 22 of 27 juveniles with fault bars versus 13 of 23 adults ($X^2 = 3.68$, d.f. = 1, $0.10 > p > 0.05$). Heavy fault bars occurred significantly more frequently in the primaries of juveniles than in those of adults; 19 of 27 juveniles had heavy fault bars versus 8 of 23 adults ($X^2 = 6.32$, d.f. = 1, $p < 0.05$). The sample size of Barred Owls was too small to be included in Chi-square tests concerning the number of heavy fault bars in the rectrices and primaries of juveniles and adults. Heavy fault bars occurred in 6% of the primaries and in 18% of the rectrices of the three hawk species. They were found in 14% of the primaries and in 18% of the rectrices of Barred Owls (Table 1). Heavy fault bars occurred in 82% of the specimens examined (Table 2). The mean number of fault bars found in individual birds ranged from 1.0 to 4.5 per bird in the rectrices and from 0.3 to 6.0 per bird in the primaries (Table 3).

The number of faint and heavy fault bars that occurred on corresponding right and left primaries and rectrices was counted. When I compared pairs of symmetrical feathers, I found that either neither feather or both feathers were more likely to have fault bars than was expected with an independent distribution of fault bars on the two wings (primaries, $X^2 = 29.5$, d.f. = 2, $p < 0.01$; rectrices, $X^2 = 47.4$, d.f. = 2, $p < 0.01$). This indicates that the distribution of fault bars in the primaries and rectrices on the left side correlated in a symmetrical fashion to the fault bars in the primaries and rectrices on the right side.

In agreement with this study, Hamerstrom (1967) found that fault bars tended to be more prominent on rectrices than on primaries in several species of raptors. She noted

that if an adult bird was stressed while regrowing its tail feathers, fault bars occurred only on the feathers that were growing at that time. Similarly, King and Murphy (1984) found that in White-crowned Sparrows (*Zonotrichia leucophrys*) fault bars occurred more frequently in rectrices than in primaries. They suggested that fault bars result as a mild form of response to shock, producing "fright molt." King defined "fright molt" as occurring when birds are frightened or subjected to stress and instantaneously shed their feathers. He also explained that rectrices are more vulnerable to fault bars and to "fright molt" than primaries. As hawks and owls acquire these feathers symmetrically, finding that fault bars occur symmetrically supports the hypothesis that they are stress related.

Slagsvold (1982) stated that fault bars occurred more frequently in juvenile Hooded Crows (*Corvus corone cornix*) than in adults, and the bars are more common on rectrices than on primaries. I found a similar situation in hawks and owls, which suggests that young individuals are subjected to stress more frequently than are adults.

My study indicates that fault bars occur regularly in at least Red-tailed Hawks, Broad-winged Hawks, Red-shouldered Hawks, and Barred Owls. As these bars appear to record the occurrence of a stressful situation in an individual's past, their presence on the feathers of museum skins as well as on birds trapped for banding and other purposes provides researchers with a potential tool for recording the occurrence of stress in individual age and sex classes within these species. For example, researchers interested in determining the extent to which male and female siblings compete for food as nestlings might be able to use sex-specific differences or similarities in the occurrence of fault bars to test their hypotheses.

Acknowledgments. This project was funded by Carolina Bird Club, Inc., and the North Carolina State Museum of Natural History. The Biology Department of Winthrop College provided research space. I thank these institutions and the following individuals for their assistance: David Lee of the N.C. State Museum for granting access to specimens; Richard Brown of the Carolina Raptor Center for providing references and for allowing me to gain valuable experience with raptors; Virginia Hawfield, Rhonda Julian, and Carla Vitez for help with the birds; Julie Bruton for help with data analysis; William Post of the Charleston Museum for a review of the manuscript; and Keith Bildstein and John Olson of Winthrop College for their guidance throughout the study.

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Range Extension of the Brown-headed Nuthatch in Western North Carolina

GAIL T. WHITEHURST

52 Lakeshore Drive
Asheville, N.C. 28804

Historically, records of occurrence of the Brown-headed Nuthatch (*Sitta pusilla*) in western North Carolina are sparse. Pearson, Brimley, and Brimley (1942) state that this species occurs "east of the mountains." Simpson (1969) reveals a noteworthy breeding record by John S. Cairns for 1894. The site near Weaverville was apparently the basin of the French Broad River in Buncombe County. The circumstances suggest a minor invasion by this species, but the death of Cairns in mid-1895 terminated further collection of data on the avifauna of western North Carolina for years to come. Potter, Parnell, and Teulings (1980) make mention of a possible western breeding range extension based on recent reports.

In 1972, a pair of Brown-headed Nuthatches was seen during the breeding season in Buncombe County (Chat 36:86). A pair nested in the western piedmont in Lenoir, Caldwell County, in 1974 (Chat 38:66). Western North Carolina winter observations became more common with Buncombe County sightings for 1981 along Bent Creek (Chat 45:82). In west Asheville, Bill Duyck reported this species at his feeder in 1981 (Chat 46:53), 1982 (Chat 46:121), and 1983 (Chat 47:110). Additionally, Ruth and Jerry Young found this nuthatch on the campus of UNC-Asheville during the winter of 1983-1984 (Chat 48:81). Curiously, there were no sightings of this species reported during the winter of 1984-1985 by Duyck or the Youngs. On 20 May 1985 I observed two adult Brown-headed Nuthatches feeding two fledged young in Buncombe County. The site is in north Asheville, near Beaver Lake and the UNC-Asheville campus. This represents the first confirmed breeding by the Brown-headed Nuthatch this far west in North Carolina during the present century. As pointed out by Simpson, this nuthatch might be expected along the valley of the French Broad River and its tributaries as well as in other low-elevation regions west of the Eastern Continental Divide.

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[For an additional sighting of the Brown-headed Nuthatch in Buncombe County, N.C., during the spring of 1985, see Chat 49:104.—ED.]

Northern Flicker Nesting on the Ground

STEVEN J. WAGNER

STANLEE M. MILLER

Department of Biological Sciences

Clemson University

Clemson, S.C. 29634-1903

In late May 1984 we received a call from Bill Alewine, a resident of Anderson, S.C., who said he had a Northern Flicker (*Colaptes auratus*) nesting on the ground in his yard. On 24 May we visited the site and found the female on the nest. We flushed the female from the nest, which had been excavated at the base of a utility pole and contained three eggs. The first egg had been noticed by Paul Alewine on 8 May, and the other two were present by 21 May.

On 25 May we returned to the site to make measurements of the eggs and nest. The eggs were 2.6 cm x 2.0 cm and were apparently addled as bubbles were clearly visible through the translucent shells. The nest itself was 9.5 cm deep at its deepest point and 18 cm long by 13 cm wide. When we were finished with our measurements and had moved away from the nest, the male returned and moved onto the nest.

On 28 May Wagner returned and took photographs of the nest with eggs and of the incubating male. (Original color slides and black-and-white prints are on file in the Clemson University Vertebrate Collection accession file number 642. Copies of the prints are also on file in the Charleston Museum.) On the afternoon of 8 June the birds were not seen, and one egg was missing. On 23 June the nest was apparently abandoned. The last egg, which was on the ground near the nest, was collected but not kept.

Our observations represent the first report of ground nesting by Northern Flickers in South Carolina. However, ground nests of this species have been described elsewhere (Table 1). In 9 of the 12 citations the nests consisted of excavations or shallow depressions in bare dirt, sand, or gravel. Two nests were excavated in lawns, and another involved eggs on grass with apparently no excavation. In none of these reports were young known to be successfully fledged from the nests, although at least one nest made it to the nestling stage. In nine of the ten cases where the fates of the nests are known, all were abandoned after apparent predation or flooding of the nests during egg laying or incubation. One set of three eggs was destroyed by a mower.

Acknowledgments. We thank Bill Alewine for contacting us and Paul Alewine for providing information on the early progress of the nest.

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TABLE 1. Reported incidents of Northern Flickers nesting on the ground.

Location—Description—Fate	Citation
Barnstable Co., Mass.—14 July 1906, 5 eggs in 3-inch-deep, 24.5-inch-diameter depression in sand and gravel—eggs collected	Brewster 1909
Suffolk Co., N.Y.—9 June 1916, 7 eggs in shallow depression in sand—eggs disappeared by 16 July	*Brewster 1916
Northampton Co., Pa.—21 June 1933, shallow cavity with 3 eggs—deserted by 28 June, pieces of shell found	*Paff 1934
Elbert Co., Ga.—19 June 1964, 9 eggs on ground in cotton field—fate unknown	Smith 1964
Wake Co., N.C.—31 May 1965, 5 eggs in depression in sand and gravel at base of utility pole—eggs and bird gone by 7 June	*Wray 1965
Whitfield Co., Ga.—4 June 1965, female incubating 5 eggs in 3-inch depression in sand pile—deserted but 3 eggs left on 11 June	Hamilton 1965
Bristol Co., Mass.—late May 1964, 3 eggs incubated by female and 3 eggs near nest scooped out of gravel—found flooded and deserted 9 June.	Kinsey 1966
Fulton Co., Ga.—23 June 1969, 11 inches deep, 6-6.5 inches in diameter, hole in lawn with 3 nestlings—survived to 24 June, after that fate unknown	Dorsey 1969
Whitfield Co., Ga.—excavated 10-20 June 1969 in turf at base of utility pole, 2 clutches of 5 eggs each—clutch 1 flooded and abandoned, clutch 2 found broken and scattered	Hamilton and Hart 1969
Fulton Co., Ga.—21 June 1971, female incubating 3 eggs on grass—eggs destroyed 22 June by mower	Dorsey 1974
Polk Co., Iowa—10 June 1972, 5 eggs in shallow scrape in bare ground—abandoned after heavy rain	*Brown 1972
Washington Co., Miss.—April 1973, 2 holes in ground 6 feet apart near 2 utility poles, 6-8 inches deep, 7 inches in diameter; 1974 and 1975 similar holes in same area with up to 2 eggs in some nests—some nests flooded, some eggs found broken	*Ganier and Jackson 1976

*photographs published

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BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1985)

- COMMON LOON:** Rare inland in summer were individuals at Lake Keowee, S.C., on 11 June (Douglas McNair) and at Seven Lakes, Moore County, N.C., on 15 June (Dick Thomas, Steve Prior).
- EARED GREBE:** One of the few records for South Carolina was one seen in breeding plumage by Alan Bennett on 15 April at Mount Pleasant. Charlie Walters and Randy Glover observed it on the following day.
- PIED-BILLED GREBE:** Probably nonbreeding were adults in breeding plumage on 1 and 23 June near Fayetteville, N.C. (Philip Crutchfield et al.) and on 18 June at Clemson, S.C. (Charlie Wooten).
- BLACK-CAPPED PETREL:** Dennis Forsythe saw one on a pelagic trip of Murrells Inlet, S.C., on 8 June. In the Gulf Stream off Oregon Inlet, N.C., where the species is regular, Dave Lee had an excellent count of 77 on 14 July.
- WILSON'S STORM-PETREL:** Hurricane Bob passed through central North Carolina during the day of 25 July. On that day it carried a Wilson's to Lake Surf, near Vass, N.C., where it was seen by Jay Carter and others. They observed a black petrel with white rump; one person (Mike Reid) was able to see a rounded tail and feet hanging down below the body. Another storm-petrel of unidentified species was seen the same day at Jordan Lake, N.C., by Peter Frederick. These are the first storm-petrel records for that state's Sandhills and piedmont.
- LEACH'S STORM-PETREL:** Remarkable numbers were seen off Oregon Inlet this summer by Dave Lee and others. High counts were 50 on 23 June and 27 on 14 July. Dennis Forsythe saw a rare individual in South Carolina off Charleston on 13 July.
- BAND-RUMPED STORM-PETREL:** Dave Lee and party observed this formerly "accidental" species on all seven pelagic trips he made off Oregon Inlet in June and July; peak counts were 21 on 15 July and 11 on 21 June.
- WHITE-TAILED TROPICBIRD:** During the passage of Hurricane Bob (25 July), Derb and Ann Carter and Harry LeGrand observed an adult for several minutes at Jordan Lake. The bird was flying around the lake and appeared healthy. Noted were a 10-inch-long tail, black bar across

the upper surface of the wings, and a yellow-orange bill, in addition to the very white overall plumage coloration. North Carolina's only other inland record was also at this lake, following Hurricane David in 1979.

MASKED BOOBY: One was seen off Oregon Inlet on 22 June by Dave Lee and party.

AMERICAN WHITE PELICAN: Will Post noted a nonbreeder in a Brown Pelican nesting colony at Cape Romain, S.C., on 17 July.

ANHINGA: Three nests each were found by Jeff Walters at Great Lake and Lake Ellis-Simon in Croatan National Forest, N.C., during the summer. A remarkable 24 birds were seen at an impounded swamp near Weldon, N.C., on 30 July (Randy Yelverton); no conclusive evidence of breeding could be found at this site despite several visits during the spring and summer.

GREAT BLUE HERON: John Cely and others noted a heronry, apparently active for several years, in the Santee River swamp, Sumter County, S.C., in May. There were 100 to 150 nests; also numerous were Great Egrets, Cattle Egrets, and Anhingas. Another newly reported colony, with 14 nests counted, was found near Weldon, N.C., in April by Randy Yelverton, Merrill Lynch, and Harry LeGrand.

LEAST BITTERN: Almost never seen in the mountains in summer, two birds (apparently a mated pair) were observed at Bo Thomas Swamp in Hendersonville, N.C., from 28 June to 9 August by Ron Warner.

GREAT EGRET: An excellent piedmont count of 135 was made by Bill and Margaret Wagner at Falls Lake, Durham County, N.C., on 29 July.

TRICOLORED HERON: Frank Enders saw one at a farm pond in central Halifax County, N.C., on 23 July, whereas Ricky Davis and Allen Bryan reported a high count of six at Jordan Lake on 26 July.

REDDISH EGRET: One was carefully studied by Mark Galizio at Topsail Inlet, N.C., on 4 August, for one of just a handful of state records.

BLACK-CROWNED NIGHT-HERON: Ron Warner saw an immature on 28 June at Hendersonville, N.C.

WHITE IBIS: Single immatures were well inland in North Carolina along Brush Creek in Buncombe County on 21 June (Ruth and Jerry Young), near Asheville in August (Jim Boozer), near Winston-Salem on 8 July (Ramona Snively, Robert Witherington, Barbara Page), and near Star in Montgomery County on 7 July (John Negus). Moderate inland counts were eight at Jordan Lake on 22 July (Allen Bryan), seven at Falls Lake on 28 July (Bryan), and five in southwestern Halifax County, N.C., on 22 June (Merrill and Karen Lynch, Harry LeGrand).

WOOD STORK: Seldom seen inland in North Carolina, one was observed near Fayetteville on 28 July by Jim Sipiora and Philip Crutchfield. Other notable records were two somewhat early at Sunset Beach, N.C., on 18 June (Sipiora); one at Bald Head Island, N.C., on 4 August (Marcus Rich); and a high count of 250 in rice fields in the delta of the Santee River, S.C., during the first 10 days of July (Will Post).

TUNDRA SWAN: Rare in summer was one noted by Harry LeGrand and Merrill Lynch at Lake Phelps, N.C., on 8 June.

BLACK VULTURE: Ruth and Jerry Young again saw the species in the mountains in Buncombe County, N.C.: two near Bent Creek on 18 June and two also near Fairview on 10 July.

OSPREY: Douglas McNair observed one, showing no evidence of breeding, from 3 June to 12 July at Wallace Lake, Bennettsville, S.C. Another was seen flying over Hanging Rock Mountain in Watauga County, N.C., on 22 June by Philip Crutchfield.

MISSISSIPPI KITE: One was seen over NC 87 just south of Elizabethtown, N.C., on 2 July by Jay Carter and Julie Moore. The species might possibly breed along the Cape Fear River in this vicinity. Douglas McNair reported small numbers during the summer along the Great Pee Dee River from the North Carolina line to below Cheraw, S.C.; nesting is likely occurring along this river.

BALD EAGLE: Monthly counts at Jordan Lake by the New Hope Audubon Society and the N.C. Nongame and Endangered Species Program revealed unprecedented numbers for the inland part of the state; 32 were tallied on 29 June, and 42 were counted on 27 July (Melinda Welton, Kathy Kuyper, et al.). Another excellent inland count was 10 in a cow pasture in Kershaw County, S.C., along the Wateree River, on 27 July (John Cely). These reports, plus numerous other inland reports, represent nonbreeding eagles, most likely postbreeders from farther south.

NORTHERN HARRIER: Completely out of season was one seen by Ruth and Jerry Young on 21 June near Fairview in Buncombe County.

SHARP-SHINNED HAWK: Sightings during the breeding season were made at Franklinton, N.C., on 5 June (Harry LeGrand), at Jordan Lake on 30 June (Allen Bryan), and at Clemson, S.C., on 6 June (Steve Wagner).

COOPER'S HAWK: Suggestive of breeding was an adult seen carrying a small bird in flight in western Gates County, N.C., on 15 June by Merrill and Karen Lynch. Other sightings for early summer, all in North Carolina, were along the Blue Ridge Parkway near Asheville (Dick Brown), near Burlington (Allen Bryan), in southwestern Harnett County (Harry LeGrand), and in southern Bertie County (Merrill Lynch).

BROAD-WINGED HAWK: This species is rare in the coastal plain in summer. Thus, notable were one or two seen in the Morehead City, N.C., area during much of the summer (Larry Crawford); one seen north of Beaufort, N.C., on 23 June (John Fussell); adults seen at three locations in the summer in the Fayetteville area (Jarvis Hudson, Jim Sipiora, Philip Crutchfield); several pairs found in the Sandhills of Chesterfield County, S.C., in the summer (Douglas McNair); and an adult seen at Lakeview, S.C., on 14 July (McNair).

AMERICAN KESTREL: Positive breeding in the coastal plain was reported by John Cely. He found three recently fledged young in a clear-cut with dead snags near Bonneau, S.C., on 12 June; and he noted that four nest boxes were used by nesting pairs in the Sandhills of Lexington County, S.C.

BLACK RAIL: John Fussell heard one calling at Back Creek, along the Carteret-Craven County line, N.C., on 23 June.

VIRGINIA RAIL: Quite rare inland in summer were one heard calling near Clemson on 1 and 6 June by Charlie Wooten and an adult seen at a golf course in Winston-Salem, N.C., on 19 and 21 July by Kim Spear and Richard Page.

SORA: Philip Crutchfield and others found one dead on a road in the Twin Lakes (mainland) area of Sunset Beach, N.C., on 29 June.

PURPLE GALLINULE: A pair was seen at Santee National Wildlife Refuge, S.C., on 19 and 20 June by Douglas McNair.

BLACK-BELLIED PLOVER: A late migrant was seen by Ricky Davis at Jordan Lake on 9 June.

BLACK-NECKED STILT: Breeding at Eagle Island, just west of Wilmington, N.C., was confirmed when several juveniles were seen in late July by Greg Massey. Another apparently newly reported site for stilts is the Wando Terminal along the Wando River, S.C., where Douglas McNair saw at least four pairs on 20 June.

AMERICAN AVOCET: The second record for the North Carolina mountains was one in breeding plumage observed by Douglas McNair. It was found on 3 July at Cashiers Pond in Cashiers.

GREATER YELLOWLEGS: One was quite late near Pendleton, S.C., on 9 June (Jon Plissner).

WILLET: Single birds, all perhaps displaced by Hurricane Bob, were noted at a farm pond in the mountains at Fairview, N.C., on 24 July (Ron Warner, Ruth and Jerry Young), at Jordan Lake on 25 July (Allen Bryan), and at Lake Hartwell near Townville on 28 and 29 July (Charlie Wooten).

SPOTTED SANDPIPER: Douglas McNair saw two at Santee Dam on Lake Marion, S.C., on 19 June; however, he did not observe any evidence of breeding.

WHIMBREL: Very rare inland was one seen by Tom and Janet Krakauer at Jordan Lake on 27 July.

- WESTERN SANDPIPER:** Rare for the mountains were six at a pond at Fairview on 24 July, as noted by Ron Warner and Ruth and Jerry Young.
- WHITE-RUMPED SANDPIPER:** Late spring migrants occurred near Pendleton until 13 June (Sidney Gauthreaux, Charlie Wooten), at Pineville, N.C., on 3 June (David Wright), and in Gaston County, N.C., on 6 June (Wright).
- BAIRD'S SANDPIPER:** One was carefully studied and described by Jeremy Nance at Eagle Island, near Wilmington, on 14 and 18 July.
- STILT SANDPIPER:** A spoil pond on Eagle Island was visited by large numbers of this species during the summer. Greg Massey saw at least 100 spring migrants there on 2 June, whereas 15 early fall migrants were found by Jeremy Nance on 14 July.
- SHORT-BILLED DOWITCHER:** Notable for the mountains was one seen at Fairview on 24 July by Ron Warner and Ruth and Jerry Young.
- RED-NECKED PHALAROPE:** Dennis Forsythe observed 25 off Charleston on 27 July.
- LONG-TAILED JAEGER:** One was collected, as was a Parasitic Jaeger, by Dave Lee on a pelagic trip off Oregon Inlet on 15 July.
- LAUGHING GULL:** One seen at Lake Townsend near Greensboro on 26 July and 5 August by Herb Hendrickson was likely displaced by the hurricane. Douglas McNair had a good inland count of 25 at Lake Marion on 19 June.
- RING-BILLED GULL:** An immature was seen in July at Brevard, N.C., by Jim Boozer, and one was noted by Herb Hendrickson near Greensboro from 16 to 26 July.
- ROYAL TERN:** One was carried by Hurricane Bob to Jordan Lake, where it was seen by Allen Bryan on 25 July. There are only several records for the piedmont of the Carolinas.
- COMMON TERN:** Individuals were seen at Brevard in July by Jim Boozer and at Beaverdam Reservoir north of Raleigh on 28 July by Dave Lee and Mary Kay Clark.
- ARCTIC TERN:** Always noteworthy were two seen on a pelagic trip off Oregon Inlet on 21 June by Dave Lee.
- FORSTER'S TERN:** Harry LeGrand and Merrill Lynch noted 9 at Lake Phelps, N.C., on 8 June and 11 on the Chowan River near Edenton, N.C., on 22 June. Well inland were two at Roanoke Rapids Lake, N.C., on 6 July (Merrill and Karen Lynch) and several near Greensboro from 16 July to 5 August (Herb Hendrickson).
- SOOTY TERN:** An adult, apparently a nonbreeder, was seen in a tern colony at Cape Hatteras point, N.C., from 26 June into August (Walker Golder, John Weske).
- BLACK TERN:** A few fall migrants were reported inland in late July near Pendleton (Charlie Wooten), Jordan Lake (Allen Bryan, Ricky Davis), Fayetteville (Philip Crutchfield, Jim Sipiora), and Greensboro (Herb Hendrickson).
- COMMON GROUND-DOVE:** This species has become very scarce as a resident on the North Carolina coast; however, one was very unusual far inland in eastern Edgecombe County, as seen by Merrill Lynch and Harry LeGrand on 8 June.
- BLACK-BILLED CUCKOO:** Dave Lee noted at least five in scattered locations in the Linville and Grandfather Mountain area, N.C., in mid-July. Alan Smith also found this species in the summer just northwest of Craggy Pinnacle in Buncombe County, N.C.
- COMMON BARN-OWL:** Steve Compton heard two calling at a nest or roost in an abandoned building in Charleston on 23 August. Birds were also noted in this building during the previous winter.
- NORTHERN SAW-WHET OWL:** Rick Knight and others heard a calling bird on Roan Mountain, N.C., on 12, 17, and 27 April. The species likely breeds on the mountain.
- YELLOW-BELLIED SAPSUCKER:** Alan Smith had many sightings of sapsuckers during the summer in high-elevation deciduous forests just northwest of Craggy Pinnacle, Buncombe County.
- ALDER FLYCATCHER:** The earliest record ever for Roan Mountain, N.C., was two noted on 16

May by Rick Knight. This is one of the last species to arrive on its breeding grounds in the Carolinas.

WILLOW FLYCATCHER: Ramona Snively and others found a nest with four eggs on 20 June at Washington Park in Winston-Salem, where the species has been present in summer for several years. Also near the eastern edge of the breeding range was one singing in central Rockingham County, N.C., on 15 June (Allen Bryan).

GRAY KINGBIRD: A visitor was seen by John Fussell and Mike Dunn on 27 June at Fort Macon State Park, N.C.

SCISSOR-TAILED FLYCATCHER: One was seen by Clyde Adkins on 12 July, and by several other birders a few days later, near Sanford, N.C.

HORNED LARK: Douglas McNair continued to clarify the breeding range in the South Carolina coastal plain this summer. He saw a family group, including at least one juvenile, at St. Paul in Clarendon County on 19 June. Others he found were one 8 miles E of Orangeburg on 18 June, two at the Florence County airport on 20 May, eight at the Darlington airport and about seven pairs in nearby fields on 20 May, and five pairs in the Bennettsville area in late May and early June.

TREE SWALLOW: This species is increasing as a breeder in the mountains of North Carolina, often using bluebird boxes for a nest site. Jim Boozer reported seven nests with eggs in Buncombe County and several nests in the Brevard area in 1985, all presumably in these boxes. [Birders might be able to entice Tree Swallows to breed in a bluebird box, at least in the mountains, by placing it in an open area beside a pond, lake, or river.—HEL]

COMMON RAVEN: Two nonbreeding birds were seen at Caesar's Head, S.C., on 12 June by Douglas McNair.

RED-BREASTED NUTHATCH: Most unseasonable was one that spent the entire summer (seen in June, July, and August) in a yard in Goldsboro, N.C., as noted by Eric Dean.

HOUSE WREN: Two, or possibly three, pairs were noted in Fayetteville during the summer, and at least one brood was produced, according to Henry Rankin Jr. Harry LeGrand heard singing individuals in recently burned pocosins in western Carteret County, N.C., on 11 and 12 June at two sites in Croatan National Forest.

BLUE-GRAY GNATCATCHER: At a rather high elevation in summer was one seen by Douglas McNair at Cashiers, N.C., on 3 July.

HERMIT THRUSH: A good breeding-season count of four singing birds was made by Allen Bryan and Harry LeGrand at Mount Mitchell, N.C., on 16 June.

CEDAR WAXWING: A nest with three fledglings was found in the Raleigh yard of James and Dee Bowers on 14 July, fide Tom Howard. Howard also saw four at Falls Lake on 10 June, but no evidence of breeding was noted. Several were also seen, without nesting evidence, at Clemson in late June by Douglas McNair.

LOGGERHEAD SHRIKE: This species continues its steady decline as a breeder in the Carolinas and is becoming rare in many areas where it was reasonably common 10 to 15 years ago. No obvious reason is apparent for the decline.

SOLITARY VIREO: At least four singing birds were found by Paul Hart at Crowders Mountain State Park, N.C., in July.

WARBLING VIREO: One was on territory during the summer at Swannanoa, N.C.; Heathy Walker saw the bird on 4 June. At a very high elevation (3800 feet) and in most unusual habitat was a pair (including a singing bird) on the flanks of Hanging Rock Mountain in Watauga County N.C. Philip Crutchfield noted the birds on 20 and 21 June.

BLUE-WINGED WARBLER: An early migrant was seen in Aiken, S.C., on 10 and 11 August by Eileen Hall and Theresa Randall.

YELLOW-RUMPED WARBLER: Completely out of season was a female or immature seen at Mount Mitchell State Park, N.C., on 12 July by Paul Hart. This species has been spreading

southward as a breeder and is becoming regular in the West Virginia spruce-fir zone; thus, summer records in the spruce-fir zone of North Carolina might be anticipated. A very late migrant was a singing male on 4 June at Rocky Mount, N.C. (Ricky Davis).

PINE WARBLER: Perhaps a high-elevation record for North Carolina was a migrant noted at 6200 feet on Roan Mountain on 12 April by Rick Knight.

CERULEAN WARBLER: Ruth and Jerry Young reported a singing bird along Curtis Creek in western McDowell County, N.C., during the summer. Far outside the usual breeding range was one heard singing along the Neuse River east of Raleigh in late June by Derb Carter.

SWAINSON'S WARBLER: One was noted by Ruth and Jerry Young along Forest Service Road 480 near Bent Creek in Buncombe County on 18 June. An excellent count for North Carolina was 13, reported by Maurice Barnhill and Greg Massey near Juniper Creek in the Green Swamp on 28 June.

SUMMER TANAGER: A female was at a somewhat high elevation of 3200 feet at a feeder near Brevard, N.C., from late August to 1 September, fide Jim Boozer.

SCARLET TANAGER: The first summer records for Cumberland County, N.C., were singing males noted in several places in the vicinity of Fayetteville, Linden, and Slocumb during June and July (Philip Crutchfield, Jarvis Hudson). Floyd Williams saw three males during the summer at Merchants Millpond State Park, N.C. In the South Carolina coastal plain, Evelyn Dabbs saw a male near Mayesville all summer, and she netted two immatures on 17 August, a date seemingly too early for the birds to have been migrants.

PAINTED BUNTING: Douglas McNair found large numbers during the summer in the inner coastal plain of South Carolina, which receives very little field coverage at that season. He found a remarkable 28 singing males at Santee refuge on 19 June, in shrubby areas and woodland edges. The previous day he saw two adult males near the Orangeburg airport, and he had nine birds on 20 June near Eutawville.

BACHMAN'S SPARROW: At the extreme edge of the range was one singing in a recent clear-cut in northeastern Warren County, N.C., on 5 June (Harry LeGrand).

LARK SPARROW: At a site where breeding was reported in 1984, Jay Carter saw one bird at Nijmegen Drop Zone in Fort Bragg, Hoke County, N.C., on 25 June.

GRASSHOPPER SPARROW: Douglas McNair noted four or five pairs in Chesterfield County near Cheraw, S.C., on 11 and 12 July. Other sites in that state's coastal plain where he found Grasshopper Sparrows during the summer were Wallace (5 birds), Bennettsville (20 birds), Marlboro County airport (10-15 pairs), Darlington County airport (10 pairs), and Florence County airport (6 birds).

HENSLOW'S SPARROW: Many new sites were discovered during the summer in the North Carolina coastal plain; all are former pocosins that have been recently clear-cut. John Fussell and others found a singing bird in June in western Carteret County in Croatan National Forest. A remarkable 13 were heard singing in eastern Edgecombe County on 8 June, and two were heard singing nearby at Hassell in Martin County on the same day (Merrill Lynch, Harry LeGrand). Merrill and Karen Lynch also found one singing bird near Topsy in Gates County on 15 June and another in extreme northeastern Wilson County on 29 June.

SONG SPARROW: At the edge of the breeding range was one noted singing in Roanoke Rapids, N.C., on 3 August by Merrill Lynch.

DARK-EYED JUNCO: Charlie Wooten heard one singing on the summit of Sassafras Mountain, S.C., on 23 June. Juncos nested there several years ago, but they are apparently not present every summer.

HOUSE FINCH: Gail Whitehurst noted two broods at Asheville, N.C., during the summer. This

(Continued on Page 11)

BOOK REVIEWS

GROWING AND PROPAGATING WILD FLOWERS

Harry R. Phillips. 1985. Edited by C. Ritchie Bell and Ken Moore. With contributions by Rob Gardner and Charlotte A. Jones-Roe in collaboration with the staff of the North Carolina Botanical Garden. The University of North Carolina Press, Chapel Hill and London. Illus. by Dorothy S. Wilbur. Appendices. Glossary. Index. 331 p. Softcover, \$14.95.

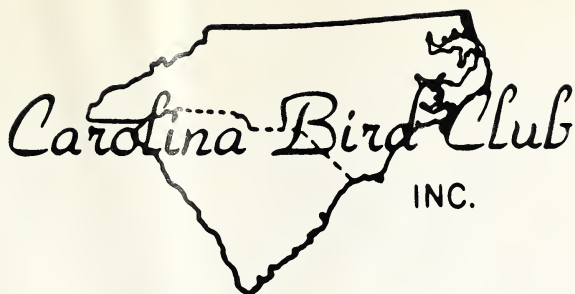
Written, illustrated, and edited by people who are affiliated with the North Carolina Botanical Garden at Chapel Hill, this book is filled with practical information for anyone who wants to grow and propagate native wild flowers, carnivorous plants, or ferns in the Southeast, particularly the Carolinas. The emphasis is on propagation from seeds, spores, and cuttings rather than on transplanting, but one appendix does tell how to organize a rescue mission when a good site for native plants is about to be bulldozed. My only regret about this book is that I did not have a copy 15 to 20 years ago when I was attempting to landscape my wooded yard with native shrubs, wild flowers, and ferns.—EFP

THE WILDLIFE GARDENER

John V. Dennis. 1985. Alfred A. Knopf, New York. Drawings by Matthew Kalmenoff. Appendix. Bibliography. Index. 294 p. Hardcover, \$17.95.

As Dennis noted in an earlier work, *A Complete Guide to Bird Feeding* (Knopf, 1975), one of the best ways to attract birds and other wildlife is to plant the native and ornamental trees, shrubs, and flowers that provide food, nesting materials, and nesting sites. In addition to information on landscaping for the birds, Dennis's new book contains chapters on attracting mammals, bees, butterflies, moths, other insects, earthworms, and reptiles and amphibians. The appendix is a very useful list of plants—small trees, shrubs, vines, and flowers—that provide food for wildlife. Although the list is not broken down by geographic regions, the author indicates where plants do best and which animals are most likely to frequent them.

In discussing wildlife that is potentially injurious to people, buildings, crops, or residential plantings, Dennis suggests protective measures. He devotes a couple of pages to squirrel-proofing feeders, but admits that the task is impossible if the animal can jump to the feeder from a nearby support. The chapter on other insects features a list of insects that help to control insect pests. In the chapter on reptiles and amphibians the author cites statistics showing that in a 10-year period bees and wasps were each responsible for more human deaths than were snakes. He pointed out that the few snakes surviving in densely populated communities are mostly small, secretive, and harmless. Nonetheless, he urges caution when snakes are encountered, particularly where urban development has recently encroached upon wildlife habitat. Dennis also has a kind word for bats and several other generally misunderstood animals. Anyone who reads this book is bound to become a better conservationist as well as a better gardener.—EFP



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The Chat

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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, Apt. 6, Bldg. L, Tau Valley Estates, Rocky Mount, N.C. 27801
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—T. Gilbert Pearson, a pioneer in the bird conservation movement, works at his desk in New York City. (Photo courtesy of Guilford College)

T. Gilbert Pearson: The Early Years

OLIVER H. ORR JR.

Thomas Gilbert Pearson (1873-1943) began his career as an ornithologist in Archer, Florida, near Gainesville. Born at Tuscola, Illinois, 10 November 1873, he was the fifth and last child of Thomas Barnard Pearson and Mary Elliott Pearson, a Quaker farm couple who had moved to Dublin, Indiana, about 1874 and then to Archer in 1882 to grow oranges and vegetables. Archer was a small village surrounded by forests, lakes, and marshes that here and there had been converted into farmland but that for the most part were still relatively undisturbed. As T. Gilbert Pearson put it in 1891, "In this section of the country . . . the naturalist may wander to his heart's content through the forest and never see a human being or a cultivated field if he chooses" (Pearson 1891).

By the age of 12, Pearson had met two older boys who were interested in birds and other wildlife. From them he learned the rudiments of collecting. One of them showed him how to make holes in a bird's egg with a small steel drill and force out the egg's contents by blowing into it with a brass blowpipe (Pearson 1937). He was introduced to *The Oologist*, a monthly magazine published in Albion, New York, by Frank H. Lattin, and to Lattin's catalog of supplies, *The Oologists' Handbook*. For several years, the catalog was Pearson's only guide, other than local usage, to the names of the birds. In order to buy equipment, including a gun, which he acquired at the age of 13, he picked blackberries and sold them; from Negro boys he bought trapped quail, dressed them, and sold them; he worked successively in a store and a blacksmith's shop (Pearson 1937). As he collected eggs and skins, he learned to label them and to keep records on printed forms. He began to write brief articles about his collecting experiences. The first one appeared in *The Oologist* for January 1888, when he was 14 (Pearson 1888).

In 1891, the year he turned 18, Pearson acquired a copy of Elliott Coues's *Key to North American Birds*, which enabled him to proceed with his studies at a heightened level of accuracy and understanding (Pearson 1937). He began to mount birds and, occasionally, other animals. He bought business stationery bearing the letterhead: "T. G. Pearson. Field Ornithologist and Oologist. Birds Mounted in first class order. Nests & Eggs Collected and Exchanged" (Pearson 1891-1895). At a restaurant in Gainesville, he met Frank M. Chapman, associate curator of ornithology at the American Museum of Natural History in New York, and began a relationship that was important to him the rest of his life. Through Chapman, he became that year a member of the American Ornithologists' Union (Pearson 1891-1895; *The Auk* 1892), a small, relatively new organization of bird students, most of whom lived in the northeastern United States.

Also in 1891, he wrote letters to several colleges, offering to exchange his collection of bird eggs, bird skins, mounted birds, and other natural history objects for a term's enrollment. He was not prepared for college. His formal education had been limited to attendance at the local school for about 4½ months each year, and he had been an indifferent student, preferring his own studies in nature to classroom exercises. The one positive response to his letters came from Lewis L. Hobbs, president of Guilford College, a Quaker school in North Carolina that had a preparatory program. Hobbs wanted to build up the "natural history cabinet" begun at the college by a faculty member who had

resigned. He offered Pearson tuition, board, and room for 2 years in exchange for his collection and his services as curator of the cabinet. Pearson went to Guilford in August 1891. After his qualifications had been examined and his academic weaknesses noted, he was placed in the first year of the 2-year preparatory program. He was enrolled at Guilford for 6 years before earning a bachelor's degree (Pearson 1937, Gilbert 1944, Guilford Collegian 1893).

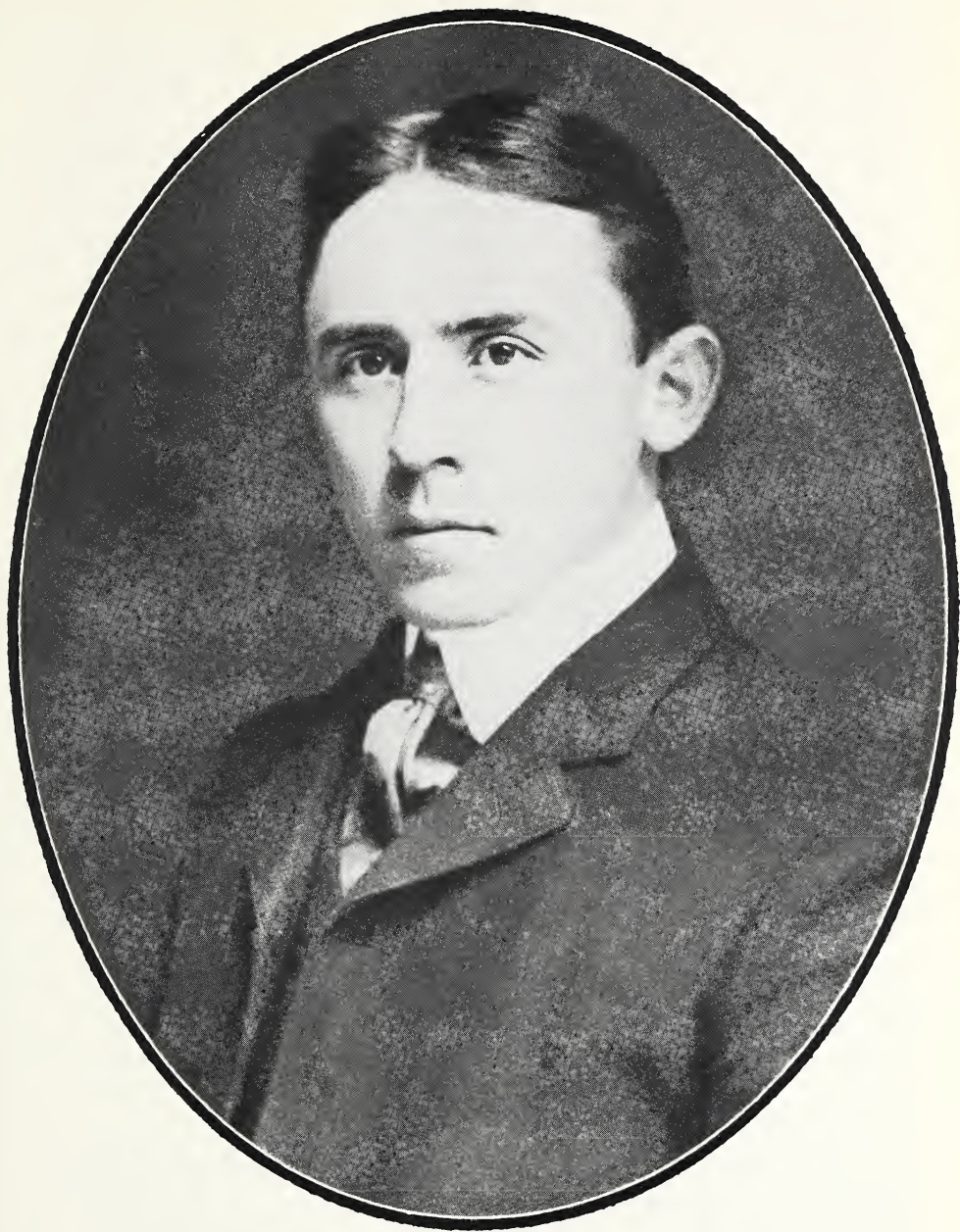
The term "natural history cabinet" applied interchangeably to the collections themselves and the room that held them. After Pearson arrived, new cases were built to accommodate his specimens. The bird eggs alone required an entire case. Representing more than 200 species of birds, the approximately 1,100 eggs consisted largely of specimens Pearson had taken from nests in Florida, but also included others he had obtained by purchase or exchange. There were Razorbill eggs from Labrador, gull eggs from Iceland, jay eggs from Yucatan, and penguin eggs from Cape Horn. In all, birds on five continents were represented (Guilford Coll. Cat. 1891-1892, Guilford Collegian 1891-1893). The egg collection was initially appraised at Guilford as being "probably the largest collection in the state" (Guilford Collegian 1892). Two years later, when more was known about it and Pearson had added to it, it was characterized as the "largest collection of bird-eggs in the South" (Guilford Collegian 1893).

Saturdays, holidays, and summer vacations were spent studying birds and collecting for the museum. To finance his work, Pearson solicited money from well-to-do Quakers in and out of North Carolina. In the fall of 1893, when his initial arrangement with the college had ended, he was given faculty status as museum curator (without faculty privileges—he did not attend faculty meetings) and remunerated with room, board, tuition, and \$50 a month (Guilford College Board of Trustees 1873-1918). This arrangement continued until he graduated.

OPPOSES PLUME HUNTING

During his years as a student at Guilford, Pearson wrote articles about birds for the *Ornithologist and Oologist* and *The Guilford Collegian*. In the *Collegian* also appeared his first writings about the need for laws protecting birds. Hunting needed to be regulated. The use of birds in the millinery trade needed to be restricted. Bird feathers, bird wings, bird heads, or entire birds, sometimes as many as six small birds, could be seen on the hats of thousands of women. Pearson wrote an essay on the importance of protecting herons against plume hunters; it was published in the proceedings of a congress on ornithology held in association with the World's Columbian Exposition in Chicago in 1893 (Pearson 1896). In the summer of 1895, he wrote the main text of a pamphlet entitled *Echoes from Bird Land. An Appeal to Women*, in which he described the cruelties of plume hunting as he had witnessed it in Florida.

Oratory was stressed at Guilford. After an awkward first speech, which elicited derisive sounds from the audience, Pearson practiced alone in the woods until he developed skill. Religion was also emphasized. Pearson became a leader in the YMCA. His arguments in behalf of birds were supported by his convictions that the human species' privilege of dominion over other species carried with it responsibilities and that the study of birds and nature in general brought human beings into a closer relationship with God. By 1895, Pearson was receiving invitations from nearby communities to speak on birds; in



T. Gilbert Pearson as a young man, probably during his years as a teacher at Guilford College, Greensboro, N.C. (Photo courtesy of Guilford College)

the summer of that year he taught a class in natural history at the University of North Carolina (Pearson 1891-1895).

In order to continue his education in science beyond the level available at Guilford, Pearson arranged to work part-time in the Chapel Hill office of Joseph A. Holmes, state geologist, for 2 years, 1897-1899, and attend the University of North Carolina (Holmes 1897). Although officially listed as a clerk in the Geological Survey (N.C. State Geologist 1897-1900), Pearson worked largely in the field, collecting data and specimens for the university and for the State Museum in Raleigh, of which Herbert H. Brimley was curator. Pearson also continued to collect data for himself, with the objective of writing a book on the birds of North Carolina.

In April 1898, Pearson accompanied Holmes and other staff members of the Geological Survey on a 10-day expedition to Albemarle and Pamlico Sounds. Greatly stimulated by the experience, he asked Holmes to let him stay on for awhile. Holmes consented and did not say when he would have to return to Chapel Hill (Pearson 1937). Pearson withdrew from his classes and did not enroll again until September. For approximately 5 months he was on the North Carolina coast, exploring the Outer Banks, Lake Mattamuskeet, Lake Ellis, Great Lake, Orton Plantation, and other sites that promised to have bird life he wished to observe or collect. Many of his notes were later drawn upon in the writing of *Birds of North Carolina*.

During his stay in Chapel Hill, Pearson contributed notes or articles on birds to *The Auk*, the *Journal of the Elisha Mitchell Scientific Society*, the *North Carolina University Magazine*, and the *North Carolina Journal of Education*. He organized informal classes in ornithology. He also distinguished himself as an orator and served as president of the YMCA (N.C. Univ. Mag. 1898). In the spring of 1899, Pearson was awarded his second bachelor's degree (U.N.C. 1898-1899). Failing to find a way to attend graduate school, he chose between two positions: assistant secretary of the YMCA for North and South Carolina and professor of biology at Guilford College. The first position paid the higher salary but the second gave him the chance to continue studying birds and working for their protection. He selected the second.

RETURNS TO GUILFORD COLLEGE

At Guilford College once more, Pearson published a checklist of the birds of Chapel Hill (Pearson 1899), wrote articles on birds, and gave public lectures to a variety of audiences, including teachers at the meetings of the North Carolina Teachers Assembly and the Southern Educational Association. When Frank M. Chapman decided to offer to readers of *Bird-Lore*, the magazine he had founded in 1899 as the organ of the state Audubon societies, a list of advisers to whom inquiries about birds could be addressed, he chose Pearson to be the adviser for North Carolina (Bird-Lore 1900). This arrangement continued for many years.

At Guilford, Pearson began work on his first book, using articles he had already published. Designed to stimulate interest in birds among school teachers and their students, *Stories of Bird Life* was published in November 1901 and received favorable reviews in *The Auk*, *Bird-Lore*, and numerous newspapers. In the summer of 1901, before the book appeared, Pearson was appointed to a professorship at the State Normal and Industrial College for women in Greensboro [now University of North Carolina at Greensboro], at a considerably higher salary than he received at Guilford. After teaching a

course in ornithology to teachers in summer school at Chapel Hill (U.N.C. 1900-1902), he attended the Harvard University summer school (Harvard Univ. 1900-1902), where he studied botany, in order to teach it at State Normal.

In New York City, William Dutcher, chairman of the American Ornithologists' Union bird protection committee, read about the publication of *Stories of Bird Life* and wrote to Pearson. The committee had composed a "model law" for bird protection, which by 1901 had been adopted, in various forms, by several states. The committee had also sponsored, through George Bird Grinnell's magazine, *Forest and Stream*, the first Audubon society for the protection of birds. That society had died, but in 1896, with the creation of the Massachusetts Audubon Society, the system of state organizations was begun. When Dutcher wrote to Pearson, three contiguous states on the Atlantic coast, North Carolina, South Carolina, and Georgia, had still not adopted adequate laws protecting birds. Dutcher asked Pearson to organize a state Audubon society that could exert pressure on the North Carolina legislature (Pearson 1937).

AUDUBON SOCIETY LEADER

With the permission of President Charles D. McIver, Pearson presented Dutcher's request to the State Normal faculty council, explaining the need for bird protection. McIver appointed a committee of three—Pearson and two others—to plan a mass meeting at which the feasibility of forming an Audubon society could be discussed (State Norm. Indus. Col. 1895-1905). On 11 March 1902, approximately 150 people gathered in the college chapel. Pearson made the major address, urging that a society be formed and that it concentrate its energies on education. The Audubon Society of North Carolina was organized, with 147 charter members and with James Y. Joyner, state superintendent of public instruction, as president; Pearson as vice president; Annie F. Petty, the college librarian, as secretary; and Walter Thompson, principal of the South Greensboro Graded School, as treasurer (Audubon Soc. N.C. 1903). All the officers held positions in the state educational system. The constitution reflected the same emphasis: three of the four objectives specified in the constitution were concerned with education; the fourth was a commitment "To labor for better legislation for bird protection" (Audubon Soc. N.C. 1902).

Administrative power in the society was largely vested in an executive committee presided over by Pearson as vice president. By June, adjustments had to be made. Thompson took a job elsewhere and resigned as treasurer; Petty resigned as secretary, having found the duties too heavy to be compatible with her responsibilities as college librarian. Pearson was then moved into the secretary's position, retaining his powers as executive officer, and Robert N. Wilson, professor of physical science at Guilford, became the treasurer. Leaflets on the society, on birds, and on the need for bird protection were written, printed, and distributed throughout the state.

In the summer of 1902, Pearson married Elsie Weatherly, of Greensboro (State Norm. Mag. 1902), whom he had met when he was a student at Guilford and she was attending State Normal. She had made some of the illustrations for *Stories of Bird Life*. Accompanied by his bride, Pearson went to Knoxville, Tennessee, immediately after the wedding. There, at the Summer School of the South, he taught a 5-week class in ornithology (Univ. Tenn. 1902), conducted bird walks, and at night delivered illustrated lectures in a large outdoor auditorium. His offerings were popular, and he returned to the school for several summers thereafter.

From Knoxville, the Pearsons went to Asheville, N.C., for almost 3 weeks. In relative leisure they studied local bird life, but he also discussed bird protection with sportsmen, who urged that the Audubon Society work for statewide legislation to protect game birds as well as nongame birds. After returning to Greensboro, Pearson began to draft, with the guidance of Aubrey L. Brooks, a rising young attorney, a bill for presentation to the legislature. In November, he took the draft with him to Washington, D.C., where he read a paper at the annual meeting of the AOU and delivered an extemporaneous address before the National Committee of Audubon Societies, formed a year earlier (*Washington Evening Star* 1902, *The Auk* 1903, *Bird-Lore* 1902). He was elected to membership on the National Committee and elevated from associate member to member in the AOU. Sometime during the course of the meetings, he spent an afternoon with William Dutcher and Theodore S. Palmer, of the U.S. Biological Survey, going over the draft of his bird bill and discussing bird protection problems in North Carolina (Pearson to Brimley 1902).

After returning to Greensboro, Pearson composed a circular letter and sent a copy to each member of the legislature at his home address. The emphasis was on the Audubon Society, its work, and the need for a law to protect wild birds (Pearson to Vann 1902). Statewide game protection, a potentially divisive issue, was not mentioned, but Pearson's draft bill, containing the provisions of the AOU model law, authorized the Audubon Society to enforce the bird and game laws of the state.

SOUTH'S FIRST GAME COMMISSION

In 1903, the Audubon bill was introduced into the House of Representatives by Wescott Roberson, a member of the society (*Audubon Soc. N.C.* 1903). Pearson addressed the House of Representatives in the bill's behalf. The bill was approved in both houses, became law on 6 March, and took effect immediately. Thus North Carolina became the first state in the South to establish a state game commission.

The act defined game birds essentially as they were defined in the AOU model law, which listed as game species all "swans, geese, brant, and river and sea ducks," "rails, coots, mud-hens and gallinules," "shore birds, plovers, surf birds, snipe, woodcock, sandpipers, tatlers, and curlews," and "wild turkeys, grouse, prairie chickens, pheasants, partridges, and quails" (Stone 1902). In deference to hunters of North Carolina, doves, robins, and meadowlarks were added to the list of game birds. Towhees were also on the list of game birds, as a concession to a legislator who intended to put them on the list of unprotected birds but worded his amendment unclearly. Unprotected birds could be killed at any time. They consisted of English sparrows, Bobolinks, hawks, owls, blackbirds, and jackdaws. Pigeons, regarded as domestic fowl, were ignored by the act. The killing or harming of any species not named as being exempt from protection was forbidden.

The Audubon Society was authorized to enforce the Audubon Act and all other laws regulating the taking of game birds and animals. Wardens were appointed by the governor of the state upon the recommendation of the society. Compensation for the wardens was paid by the society from funds raised largely through the sale of hunting licenses, at the rate of \$10 per year, to hunters who were not residents of North Carolina. Eight men, including Pearson, James Y. Joyner, Robert N. Wilson, Herbert H. Brimley, and J. F. Jordan, sheriff of Guilford County and a sportsman, were named as incorporators of the society. At the incorporators' first meeting, Joyner declined the presidency but accepted the vice-presidency. Jordan was chosen president, Pearson secretary, and Wilson treas-

urer. An executive committee was named. When it met in April, it gave Pearson full power to direct the society, at an initial salary of \$600 a year (Pearson to Brimley 1903). The position was part-time, supplementary to his position as a college professor.

The society began its work as a game commission without any money. Funds raised through membership fees had been spent in publicizing the organization, spreading information about birds, and promoting passage of the Audubon Act. Money from the sale of hunting licenses, which were sold by county clerks of court, was not available until December 1. William Dutcher provided enough money from an AOU fund for Pearson to employ three wardens to protect the sea-bird colonies on the coast. Two thousand linen signs, summarizing laws and identifying protected birds, were also supplied by Dutcher. By the end of the first year, the Audubon Society was prospering. Membership fees amounted to nearly \$1,700; the sale of hunting licenses brought in almost \$5,000. The warden force consisted of 29 agents stationed in 22 counties and available for duty anywhere in the state (Audubon Soc. N.C. 1904).

Pearson hoped to enforce the laws more by educating the public than by punishing transgressors. He directed the wardens to be teachers as much as law enforcement officers. Unless a violation was particularly flagrant, violators of the law were merely warned on the first offense. A junior department of the society was created, and volunteers were asked to form local junior branches. A library of 10 books was selected, and 50 sets were assembled for distribution to county superintendents of schools who donated \$5 to the society and agreed to make the books available to teachers, who were then in turn expected to use the books in teaching natural history to their pupils.

In the summer of 1904, Pearson had an opportunity, for the first time since 1898, to spend a few weeks in field study on the North Carolina coast (Pearson 1904, Pearson 1905). Armed with field glasses and camera equipment rather than a gun, he took notes and made photographs from which slides were produced for use in the stereopticon projector. The collector of bird bodies had become a collector of bird pictures.

Also during the summer, he taught a 3-week course in ornithology at the South Carolina State Summer School, at Rock Hill, lectured on birds at the summer schools of Davidson College and the University of North Carolina, and addressed the State Horticultural Society of Georgia (State Norm. Mag. 1904). From time to time throughout the year, he visited hunting preserves and clubs established primarily by wealthy men from northern states. He solicited their financial support for the Audubon Society and sought their commitment to standards of sportsmanship that would ensure the preservation of game species.

In January 1905, after a donation from a wealthy benefactor, the National Committee of Audubon Societies incorporated itself as the National Association of Audubon Societies. William Dutcher was elected president; Pearson was chosen secretary and special agent in charge of soliciting contributions and building a national membership. The principal national leadership for bird protection thus passed from the AOU bird protection committee to the new association. In anticipation of this development, Pearson had resigned from his teaching position at the State Normal College in December 1904 but had retained the secretaryship of the Audubon Society of North Carolina.

In the summer of 1905, Pearson sought to reorganize and reinvigorate the Audubon Society of South Carolina, which had been established in 1900. He offered classes in ornithology at the summer school of Clemson College and gave public lectures there and

elsewhere in the state (Pearson 1937). He needed to find a counterpart to himself, that is, an established ornithologist who was a persuasive speaker and a skillful organizer and who was willing to administer the society. No such person appeared. Arthur T. Wayne, of Mount Pleasant, was a proficient ornithologist, but he preferred to work alone (Palmer 1954). Pearson turned to persons prominent in education and government. On 10 July, the Audubon Society of South Carolina was reorganized, with Senator Benjamin R. Tillman as president and State Superintendent of Public Instruction Oscar B. Martin as secretary. Pearson assisted the new officers by visiting several towns, soliciting memberships; he also organized an educational department in the society and enrolled 225 teachers as members (Pearson 1937, Bird-Lore 1905).

A bill similar to the Audubon Act in North Carolina, providing for a warden system administered by the state Audubon society, was introduced in the legislature of South Carolina (Bird-Lore 1906). Pearson addressed the legislature in January 1906, hoping to win support for the bill. "I worked like a beaver, in Columbia," he wrote later, "exhausting every device I could think of to get our Audubon bill considered, but the Legislature adjourned without its having been brought to a vote" (Pearson 1937). In the following year, he wrote a new bill, lobbied in its behalf, and, after it became law, helped the Audubon Society organize to meet its responsibilities. The new society president, B.F. Taylor, who impressed Pearson as being a "splendid officer," lent money to the organization, enabling Secretary James H. Rice to begin employing wardens without waiting for hunting license fees to be received in the fall (Pearson to Dutcher 1907, Bird-Lore 1907, Audubon Soc. N.C. 1907).

SOUTH CAROLINA AUDUBON WARDEN KILLED

Neither President Taylor nor Secretary Rice was able to arouse adequate support for the Audubon Society and the new law. The society's membership remained low; the wardens were slow to make arrests and often unsuccessful in obtaining convictions. By November, one person had been convicted of killing a Great Blue Heron. Although by January 1908, the total number of convictions had risen to 11, many reports of uninvestigated violations were reaching Pearson (Bird-Lore 1907, Pearson 1937). He consulted with State Superintendent of Public Instruction Martin and arranged for Mary T. Moore, school secretary of the Audubon Society of North Carolina, to spend 6 weeks lecturing on birds and bird protection in the public schools and before teachers groups. She worked under Martin's direction and at the invitation of local schools and groups. By the end of her tour, she had spoken a total of 68 times to an estimated 15,000 teachers and pupils (Audubon Soc. N.C. 1908, Pearson to Dutcher 1908). During 1908, several hundred arrests were made by the more than 100 wardens then employed, but convictions were still difficult to obtain (Bird-Lore 1909). Moreover, in September, near St. George, an Audubon warden was assassinated by a man whom Rice believed to be one of two "notorious fish-pirates" who had been threatened by the warden with prosecution (Bird-Lore 1909).

Perhaps the murder was the event that finally convinced the Audubon Society of South Carolina it was inadequate for the task it had undertaken. In October 1908, at its annual meeting, the society adopted a resolution advocating the establishment of a state warden system separate from the society and supported by a license tax on hunters,

resident and nonresident. Bills were drafted for the legislature, which in 1910 created the position of chief game warden and imposed a nonresident hunting license tax but rejected the resident hunting tax. Because of the immediate lack of money to employ wardens, the laws protecting birds had little enforcement in the summer of 1910. Egret rookeries on the coast were plundered by plume hunters, Rice reported, and no one was arrested. In 1911, Pearson used National Association funds to employ wardens on the South Carolina coast. Only four egrets were reported as having been killed during that summer (Bird-Lore 1909-1910, Palmer 1912).

In North Carolina, the Audubon Society, under Pearson's direction, served with growing strength and success for 6 years. By the end of the Audubon year, March 1909, a hundred wardens, some full-time, others part-time, were on duty. During that same year, there were 163 convictions in the courts for violations of the bird and game laws. Half the convictions were for hunting on someone else's land without permission; 17 were for killing squirrels illegally, 16 for killing quails illegally, and 10 for hunting ducks and geese illegally. There were individual convictions for killing woodpeckers, snowbirds, warblers, herons, Blue Jays, buzzards, and nighthawks. There was also one for selling mockingbirds. Because of heavy storms on the coast, the number of sea-birds—gulls, terns, and Black Skimmers—raised during the summer of 1908 was little more than 3,000, far below the 10,000 raised the previous summer but above the 1,700 raised in 1903, the first year the birds were protected by the state society. Moreover, a new species of tern, the Cabot's Tern [Sandwich Tern], had established itself on the protected coast (Audubon Soc. N.C. 1905-1909).

Although there was little open criticism of the Audubon Society, resentment on the part of convicted persons and their friends and sympathizers was growing. Moreover, Pearson's strong influence in the state legislature, exerted through committees friendly to him and the society, rankled some legislators. His unusual role, as an official of the National Association as well as the state society, was at times misunderstood. His travels in behalf of the national organization (to South Carolina, Georgia, Florida, Tennessee, Mississippi, Arkansas, Texas, Mexico, Virginia, District of Columbia, New Jersey, New York, and the Midwest) were susceptible to being portrayed as pleasure trips, paid for with the receipts from the sale of hunting licenses in North Carolina.

In the legislature of 1909, a bill was introduced to remove Beaufort and Currituck Counties from the Audubon Society's jurisdiction and authorize them individually to sell hunting licenses (good only in the county selling the license) and to employ their own wardens to enforce the bird and game laws. Half the money from the sale of licenses would go to the county school fund. The arrangement had such appeal that after intermittent debates over a week's time, a law was enacted that removed 52 of the state's 98 counties from the Audubon Society's jurisdiction, leaving only 46 in which the society could sell licenses and enforce the law (N.C. House Rep. 1909, N.C. Pub. Laws 1909, Pearson 1937).

North Carolina, the first southern state to adopt a statewide system of bird and game protection, thus became, in 1909, one of the few southern states not to have such a system. By 1916, it was the only southern state other than Mississippi not to have such a system. In 1911, and every 2 years thereafter until success was achieved, Pearson sponsored, through the Audubon Society of North Carolina, a bill to establish a new state game commission.



T. Gilbert Pearson with his daughter Elizabeth. This photograph appears to have been taken on the porch of the home of H.H. Brimley, Ashe Avenue, Raleigh, N.C. (Photo courtesy of N.C. State Museum of Natural History)

It was finally created in 1927, by an act that abolished the Audubon Society and transferred its property to the new commission (N.C. Pub. Laws 1927).

The curtailing of the jurisdiction of the Audubon Society of North Carolina enabled Pearson to devote more of his time to the National Association. He accepted re-election as state secretary on the condition that he would be expected to devote "only such time as could be spared" from duties in the National Association (Audubon Soc. N.C. 1910). Nonetheless, he was probably the best-known game commissioner in the nation. In 1910, he was elected president of the National Association of State Game and Fish Wardens and Commissioners (Pearson to Dutcher 1910, New Orleans Picayune 1910).

William Dutcher had a stroke in October 1910 that rendered him unable to speak or write. The board of directors of the National Association of Audubon Societies bestowed upon Pearson the powers of executive director. In 1911, after it had become apparent that Dutcher was unlikely to recover, Pearson resigned from his position with the Audubon Society of North Carolina. In January 1912, he moved his family, consisting of his wife and three children (Elizabeth, who later married Charles T. Jackson; Thomas Gilbert Pearson Jr.; and William Theodore Pearson, named for William Dutcher and Theodore S. Palmer), to a house on Loring Place, in New York City, where he resided the rest of his life. When Dutcher died in 1920, Pearson became the president of the National Association. He held that position until he retired in 1934. In 1922, he founded the International Committee for Bird Protection, for which he served as president until 1938.

Before leaving North Carolina, Pearson had become so busy with Audubon work that he realized he could not soon write the kind of book on the birds of North Carolina he wanted to write if he did the work alone. Herbert H. Brimley and his brother, Clement S. Brimley, agreed to collaborate with him. The board of directors of the Audubon Society of North Carolina authorized the appropriation of \$1,200 to pay for paintings and drawings for the book (Gold 1911); the state Geological Survey agreed to publish it. Although all three men contributed to the text, Pearson did the final drafting (Pearson et al. 1942). In 1913, the book was in the last stages of binding when a fire destroyed the printing establishment. Not until 1919 was the work finally published.

Pearson drew upon his studies and observations in North Carolina in his other works, which include *The Bird Study Book* (1917) and *Tales From Birdland* (1918). He also contributed to and edited *Birds of America* (1917) and *Portraits and Habits of Our Birds* (1920-1921).

In 1924 Pearson's alma mater, the University of North Carolina, awarded him the honorary degree of Doctor of Laws (Linton 1964).

Soon after coming to North Carolina, Pearson had begun to look upon it as his home state. He continued to do so even while living in New York for more than 30 years. Although he did not attend the organizational meeting of the North Carolina Bird Club, those who did attend voted to include him as an honorary charter member (Chat 1937). He contributed articles to *The Chat*, served on the membership committee in 1940, and delivered a lecture to the annual meeting in 1941. In 1942, after the North Carolina Bird Club had taken advance orders to assure sales, a revised edition of *Birds of North Carolina* was published by the North Carolina Department of Agriculture. Following Pearson's death on 3 September 1943, Herbert H. Brimley wrote of his friend, "Yes, we shall miss Gilbert Pearson. Men of his stamp are not every day creations" (H.H. Brimley 1943).

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129 6th Street, N.E., Washington, D.C. 20002.

About the author. Oliver H. Orr Jr., was born in Brevard, N.C. An older brother, a bird watcher, subscribed to *Bird-Lore*; the name of T. Gilbert Pearson was familiar in the home. Orr earned a bachelor's degree in political science at the University of North Carolina at Chapel Hill and a doctorate in American history there. He worked for several years in the university library, taught for several more at North Carolina State University, and has been a historian at the Library of Congress since 1965. He has published a biography of Charles Brantley Aycock, who as governor of North Carolina supported Pearson's bill to establish the Audubon Society of North Carolina as the state game commission and who, after leaving the governorship, served as the society's vice president and attorney. Orr is currently writing a biography of Pearson's life up to the winter of 1911-12, when he moved his residence from Greensboro, N.C., to New York City to become the first full-time executive officer of the National Association of Audubon Societies.



Roundtable

... with Louis C. Fink

North Carolina Breeding Bird Atlas Project

The North Carolina State Museum of Natural History is in the process of establishing the support facilities necessary for conducting a breeding bird atlas project. Maps, computer services, and secretarial staff will be available in time to send instructions to participants prior to the 1987 nesting season. Anyone interested in reserving a particular 1-square-mile block should notify David S. Lee, Curator of Birds, N.C. State Museum of Natural History, P.O. Box 27647, Raleigh, N.C. 27611. The atlas project will not delay the planned publication of the *Distributional Survey of the Breeding Birds of North Carolina*.

Alternation of Singing Bouts in Vireos

Years ago at the Jigger John campground in the White Mountains of New Hampshire, I awakened to the singing of Solitary Vireos (*Vireo solitarius*). These birds were abundant in the mixed coniferous and deciduous forest of the area. By the time Janice and I had settled down to breakfast, the Solitary Vireos had quieted, and Red-eyed Vireos (*Vireo olivaceus*) commenced singing from clumps of deciduous trees, mostly birch and beech. Throughout the morning the two species alternated song periods, only occasionally overlapping at the beginning, or at the end, of a bout. Never did a member of the alternate species intrude while the other was singing vigorously.

Since that particular observation, I've noted alternate singing by the two species at Algonquin Park, Ontario; at Joyce Kilmer and Julian Price in the mountains of North Carolina; and several times in the Reedy Creek section of Umstead Park near Raleigh. At locations where only one of the species is in residence, the species present does not seem to restrict its singing to periods but is likely to sing throughout the day. Individual birds might, however, sing in bouts. That seems to apply to the Red-eyed Vireo in much of the piedmont and coastal plain of North Carolina and to the Solitary Vireo at the Shining Rock Wilderness Area on the Blue Ridge Parkway, and on the summit of Mount Jefferson in Ashe County, N.C., sites where I've not observed the Red-eyed Vireo. Therefore, I suspect that where the two species hold territories in proximity with each other, each adjusts its singing bouts so as not to interfere with the other. I doubt that anything like courtesy is involved. The songs of the two vireos are similar, and very likely

each territorial male needs to advertise his presence with a minimum of static from the conspecific neighbor.

Curiously, I've not noted whether or not the Yellow-throated Vireo (*Vireo flavifrons*) relates to other vireos in song periodicity. There must be places where the Yellow-throated Vireo dwells within earshot of both the Red-eyed and the Solitary Vireo. Have others noted anything like the phenomenon described above?—JOSHUA A. LEE, 5104 Newcastle Road, Raleigh, N.C. 27606

Golden Eagle and Swans at Pungo

On 16 February 1986 Scott Hartley, my wife Jan, and I visited Pungo National Wildlife Refuge. We took a lunch break on the north side of the lake adjacent to a wheat field, just outside the refuge boundary. As we looked through our telescopes at some 2,000 Tundra Swans (*Olor columbianus*), a large dark bird flew in low over the flock. My first thought was an immature Bald Eagle (*Haliaeetus leucocephalus*). Then the bird banked, and I saw the distinctive white band on the tail, indicating a Golden Eagle (*Aquila chrysaetos*). The eagle flew in low over the swans, hovering, swooping down, and landing. This performance continued for about 20 minutes until the eagle gained altitude and flew back to Pungo Lake. We saw it once more flying low over fields within the refuge. The swans reacted by clearing out each time the eagle landed. When the eagle flew over us, we saw indistinct white patches on the underside of the wings, indicating a subadult bird. —MICHAEL L. DUNN, East District Naturalist, N.C. State Parks, Route Two, Box 50, Seven Springs, N.C. 28578

Newspaper Gleanings

Observers counted 94 Whooping Cranes ready to leave Aransas Refuge in Texas for Canada, with twice as many birds of breeding age as last year. Cornell University scientists are optimistic over the fate of five rare species. Since the banning of DDT and other persistent pesticides, numbers of the Bald Eagle, Prairie Falcon, Northern Goshawk, Merlin, and Gyrfalcon have all soared.

The largest gathering of Bald Eagles in the Lower Forty-eight States is said to occur at McDonald Creek in Glacier National Park, Montana. This year, 500 eagles were watched by an estimated 6,000 visitors despite snow and temperatures below zero. The eagles were attracted by salmon making their way to spawning grounds.

A Great White Albatross, considered extinct some years ago, was observed by a group of bird students cruising off Point Reyes in California. It is hoped that the bird may re-establish itself on our western coast.

About 1,500 groups took part in the recent Christmas Count. Last year 41,000 observers counted 108 million birds. The most abundant species? More than 53 million Red-winged Blackbirds.

CBC Rare Bird Alert Phone Number
704/875-2525

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Records of Seabirds from South Carolina Offshore Waters

J. CHRISTOPHER HANEY

Department of Zoology
University of Georgia
Athens, Georgia 30602

The status of seabirds in Georgia and South Carolina is less well known than in adjacent states. During seabird surveys conducted from 1982 to 1985 in the Georgia Embayment, I made occasional observations in South Carolina offshore waters (here defined as that region between 32°03'N and 33°51'N out to a distance of 162 km). This note presents sightings or details for eight seabird species seen off South Carolina. All of these species have been considered rare in the state or are infrequently seen because of their pelagic habits.

BLACK-CAPPED PETREL (*Pterodroma hasitata*). Prior to 1982, this species was known from South Carolina only through an account by W.F.J. Morzer-Bruyns (1967, *Ardea* 55:270), who observed at least 12 on 6 September 1966. Observations I made of Black-capped Petrels are summarized in Table 1. Two or three different birds were photographed on 10 October 1983 (photograph to SCARC; ChM 1986.8). Virtually all Black-capped Petrels were seen at or beyond the continental shelf break (180 m/100 fathom isobath) near the Gulf Stream.

MANX SHEARWATER (*Puffinus puffinus*). Single Manx Shearwaters were observed on three occasions, once in spring and twice in fall. One bird was seen on 29 September 1983 at 33°22'N, 77°11'W about 160 km E of Murrel's Inlet in 37 m of water. Another was seen 10 October 1983 at 32°11'N, 78°59'W some 110 km SE of Charleston in water with a depth of 183 m. Both of these birds were separated from nearby Audubon's Shearwaters (*P. lherminieri*) by slightly larger size, proportionately longer wings, shorter tails, and more bounding, gliding flight. On 17 April 1985 I observed a Manx Shearwater within 30 m of the ship at 32°52'N, 78°47'W in 30 m of water 120 km E-NE of Charleston. In this individual, the white undertail coverts were clearly visible.

LEACH'S STORM-PETREL (*Oceanodroma leucorhoa*). Records of this storm-petrel were limited to spring and fall seasons (Table 2). A high count of nine birds at one location was made on 10 June 1984. Single birds flew aboard ship on 17 October 1984 and 6 May 1985, the former photographed before release (photograph to SCARC). All were seen beyond the continental shelf edge.

TABLE 1. Records of Black-capped Petrels from South Carolina offshore waters, 1983-1985.

Date	Number Observed	Location	Depth (m)
10 October 1983	11*	32°09'N, 79°03'W	183
13 October 1983	5	33°37'N, 76°32'W	327
5 May 1984	4	32°07'N, 78°11'W	160
9 June 1984	21	32°08'N, 79°02'W	175
10 June 1984	19	32°28'N, 79°22'W	260
11 June 1984	4	32°37'N, 78°15'W	480
13 June 1984	50	32°05'N, 78°21'W	440
13 June 1984	9	32°15'N, 78°42'W	320
16 October 1984	4	32°09'N, 78°55'W	430
17 October 1984	1	32°20'N, 78°51'W	247
17 October 1984	4	32°16'N, 78°40'W	410
18 October 1984	24	32°08'N, 78°59'W	293
6 May 1985	2	32°12'N, 79°14'W	183

*Photographed

BAND-RUMPED STORM-PETREL (*Oceanodroma castro*). One bird was seen on 13 June 1984 with three Wilson's Storm-Petrels (*Oceanites oceanicus*) at 32°04'N, 78°18'W about 160 km SE of Charleston (water depth 440 m). This bird was noticeably larger than the Wilson's Storm-Petrels and lacked the erratic, twisting flight and prominently forked tail of the Leach's Storm-Petrel. Its flight was shearwater-like, and it fed with wings held in a horizontal plane.

WHITE-TAILED TROPICBIRD (*Phaethon lepturus*). An adult White-tailed Tropicbird (black upperwing pattern) was seen on 10 June 1984 160 km E-SE of Charleston (32°27'N, 78°23'W) in water 285 m deep.

MASKED BOOBY (*Sula dactylatra*). A subadult Masked Booby was photographed off Hilton Head on 14 July 1983 (Lee and Haney, 1984, Chat 48:29-45: Fig. 3). Although this photograph clearly shows only one diagnostic field mark (black secondaries on trailing edge of wing), the straw-colored bill, dark mask, and all-black tail were also observed.

SOUTH POLAR SKUA (*Catharacta maccormicki*). On 11 June 1984, I watched a dark-morph South Polar Skua with a flock of 200 to 300 Audubon's Shearwaters, Cory's Shearwaters (*Calonectris diomedea*), Wilson's Storm-Petrels, Black-capped Petrels, Common Terns (*Sterna hirundo*), and Bridled Terns (*S. anaethetus*) feeding over schooling baitfish. This bird was compared directly to two Pomarine Jaegers (*Stercorarius pomarinus*); the large size, broad wings, and pale nape contrasting with blackish-brown body aided identification. This individual was photographed, but the distance to the bird was too great for capturing definitive field marks. The location of this sighting was

TABLE 2. Records of Leach's Storm-Petrels from South Carolina offshore waters.

Date	Number Observed	Location	Depth (m)
12 October 1983	1	33°40'N, 76°34'W	256
10 June 1984	1	32°35'N, 78°18'W	218
10 June 1984	3	32°24'N, 78°28'W	242
10 June 1984	9	32°33'N, 78°20'W	238
12 June 1984	1	32°41'N, 78°01'W	252
13 June 1984	6	32°14'N, 78°44'W	400
17 October 1984	1*	32°18'N, 79°25'W	-
6 May 1985	1	32°12'N, 79°14'W	183

*Photographed

approximately 110 km SE of Cape Romain (32°37'N, 78°15'W) in water with a depth of 223 m.

BROWN NODDY (*Anous stolidus*). I observed a Brown Noddy feeding with Cory's Shearwaters, Audubon's Shearwaters, and Common Terns on 11 October 1983 at 32°38'N, 79°12'W some 75 km E of Charleston (water depth 31 m). The bird's flight was very low over the water, and the white cap, contrasting with dark body, and heavy, wedge-shaped tail were apparent. This bird appeared noticeably larger than accompanying Common Terns, thus eliminating the smaller Black Noddy (*A. minutus*). Brown Noddies are rarely seen at sea off the southeastern United States in the absence of storms.

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Reddish Egret in Anderson County, S.C.: First Inland Record for State

CHARLIE W. WOOTEN
Department of Biological Sciences
Clemson University
Clemson, S.C. 29634

STEVE COX
123 Brookview Circle
Greenville, S.C. 29605

On 28 July 1985, Cox spotted an interesting heron foraging in shallow water at the edge of a mud flat at Little Beaverdam Creek, Lake Hartwell, 3.7 km SE of Townville, Anderson County, S.C. Wooten arrived in the area shortly thereafter and studied the bird through a 20X spotting scope at close range. Weather was overcast with occasional drizzle. After careful scrutiny, we decided the bird was an immature Reddish Egret

(*Egretta rufescens*). This identification was corroborated by Sidney A. Gauthreaux Jr. on 30 July, the last day the bird was sighted. Cox photographed the bird using a 300 mm lens at a distance of about 50 m. Color transparencies of the bird have been deposited in the Charleston Museum (ChM 1985.80.1, 1985.80.2).

The most conspicuous features of the egret were its size and feeding behavior. The bird was slightly smaller than a Great Egret (*Casmerodius albus*) and considerably larger than a Snowy Egret (*Egretta thula*), with which direct comparisons were possible. At a distance, the bird appeared uniformly grayish-brown. Through the spotting scope, the plumage appeared gray with noticeable pinkish colors on the head, neck, upper back, and inner wings. The pinkish color appeared closely matched by Smithe's (1975) deep vinaceous. There was no white on the abdomen, but a few white feathers were on the middle back and in front of the wrist. The outer wings, lower back, and tail were blue-gray; the legs were pale green. The bill appeared disproportionately long and was not distinctly bicolored as in adult Reddish Egrets. The basal portion of the bill was slightly lighter in color than the outer portion, but the overall appearance was dark. The dorsal surface of the basal portion of the bill had a blue-green hue.

The Reddish Egret's feeding behavior was jerky and erratic. It often made sideways maneuvers and spread its wings in an arc-like fashion (canopy feeding; Meyerriecks 1960). It was a much more active feeder than the other herons, although an immature Snowy Egret occasionally fed in a similar manner nearby. The Reddish Egret captured several small fish.

This record is the tenth sighting of the Reddish Egret in South Carolina, and the first inland record for the state (Table 1). There is one inland sighting for North Carolina at Charlotte (Holmes 1948). Interestingly, our record is only the second report of an immature bird known from the Carolinas. However, all five Georgia records for this species are immature birds (Kleckner 1983). Dark-phase Reddish Egrets in immature plumage are conspicuously different from birds in adult plumage and may be overlooked. Moreover, only one field guide pictures an immature bird (National Geographic Society 1983), and the other guides do not provide an adequate written description. Lowery (1974) provides an adequate written description of an immature Reddish Egret. Reddish Egrets remain in immature plumage throughout the winter until March to May when they acquire plumage similar to that of the adults (Bent 1926). The majority of waders that occur in the Anderson County area in late summer are immature birds (pers. observ.). Most Reddish Egrets occurring in the Carolinas in late summer and fall should be immature birds if they follow the pattern of other waders seen in this area. Most published accounts provide no information on color phase or age of the birds reported, therefore it is impossible to make general statements about the occurrence of Reddish Egrets in the Carolinas. Reports of this species would be more useful if information on age, sex, and phase (if discernible) was published in the accounts.

The source of this bird is an enigma. Herons and egrets are known to exhibit fairly extensive postbreeding wandering. This bird may have been a wanderer from breeding populations on the Gulf of Mexico, and the distance moved may have been influenced by Hurricane Bob, which passed through the central portion of the state on 25 July.

The number of reports of Reddish Egrets has increased over the last few years (Table 1). This may represent an increase in the intensity of field work rather than any population change. However, Lowery (1974) suggests that the population may be

TABLE 1. Summary of published Reddish Egret records from the Carolinas. Many of the birds classified as "unknown" age are probably adults. Citations from *The Chat* are from "Briefs from the Files" compiled by Harry E. LeGrand Jr. Citations from *American Birds* are from "Southern Atlantic Coast Region" edited by Robert P. Teulings.

Date	Location	Phase	Age	Authority
15 Jan. 1934 ^a	Berkeley Co., S.C.	Dark	Unknown	Sprunt 1935
		White	Unknown	
27 July 1947	Charlotte, N.C.	Dark	Unknown	Holmes 1948
25 Sept. 1971	Pea Island NWR, N.C.	Dark	Adult	Parnell 1972
21 May 1972	Huntington Beach SP, S.C.	Unknown	Unknown	AB 26:845
10 June 1972	McClellanville, S.C.	Unknown	Unknown	AB 26:845
13 April 1973	Morehead City, N.C.	Unknown	Unknown	AB 27:758
17-28 May 1975	Oregon Inlet, N.C.	Unknown	Unknown	AB 29:958
14 July 1976	Huntington Beach SP, S.C.	Unknown	Unknown	Chat 41:14
13 Oct. 1979	Charleston Co., S.C.	White	Unknown	Chat 44:45
4 Nov. 1979	Savannah NWR, S.C.	White	Unknown	Chat 44:45
21 June 1981	Cedar Island, N.C.	Dark	Unknown	Chat 46:21
24 May 1983	Mt. Pleasant, S.C.	Dark	Unknown	Chat 47:105
7 April 1984	Middleton Plantation, S.C.	Unknown	Unknown	Chat 48:96
24 July				
-1 Aug. 1984 ^b	Huntington Beach SP, S.C.	Dark	Immature	Chat 49:22
28-30 July 1985 ^b	Townville, S.C.	Dark	Immature	This paper

^aBoth birds seen together

^bPhotographs on file at the Charleston Museum

expanding. Future sightings of this species may help to illuminate this problem.

Acknowledgments. Sidney A. Gauthreaux Jr. provided many valuable comments on the manuscript and stimulating discussion regarding Reddish Egrets in the Carolinas. Harry E. LeGrand Jr. also provided helpful suggestions on the paper.

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Wood Storks Observed in Aiken, Allendale, and Barnwell Counties, South Carolina

M.C. COULTER, L. BRYAN, A. COMER, L. HUFF, S. JEWELL,
W. LEE, and L. McALLISTER

Address of first author:

Savannah River Ecology Laboratory
Drawer E, Aiken, S.C. 29801

The Wood Stork (*Mycteria americana*) breeds in the southeastern United States, primarily in Florida, south through the Caribbean and Central America, and in much of South America (A.O.U. 1983). In the United States the species formerly bred along the Gulf of Mexico from Texas through Florida, with scattered small colonies along the coasts of Georgia and the Carolinas (Hamel 1977, Palmer 1962). Since the mid-1960s, the Florida colonies have had poor reproductive success, and that population has declined (Ogden and Nesbitt 1979). In 1984 the U.S. Fish and Wildlife Service listed the U.S. breeding population as endangered (Bentzen 1984).

Despite the overall decline in numbers, the Wood Stork has been reoccupying the northern parts of its range, along the eastern coast, where a few small colonies have been found recently (Ogden 1978). In 1980 a colony of about 100 breeding pairs was discovered at the crossroads known as Birdsville, in Millen township, Jenkins County, Georgia (Tate and Humphries 1980). The Savannah River Ecology Laboratory of the University of Georgia's Institute of Ecology has been studying the birds at this colony since 1982. The authors have been involved in this work since May 1984 and, in addition, have observed storks foraging in South Carolina. We report here on sightings of Wood Storks in Aiken, Allendale, and Barnwell Counties.

Storks have been reported in this area during the 50 years before the colony in Birdsville was discovered (Murphey 1937). Murphey noted that the birds probably did not breed locally, but that flocks of more than 30 birds were seen regularly in August and September. In June 1956 and July 1957 storks were recorded on the Savannah River Plant in Aiken and Barnwell Counties (Norris 1963). In September 1977 about 24 storks were seen at Kathwood Lake on Silver Bluff Plantation, Beech Island, Aiken County (D. Connelly, Sanctuary Manager, Silver Bluff Plantation, pers. comm.).

In 1984 the birds were first observed at the Birdsville rookery on 15 March, and the first eggs were reported on 4 April (J. Meyers, Alabama Department of Conservation and

TABLE 1. Wood Stork sightings on the Savannah River Plant (Aiken and Barnwell Counties, South Carolina) in 1984 and 1985.

YEAR	MONTH								
	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.
1984	ns*	ns	1	5	5	7	14	8	1
1985	0	0	2	2	20	8	1	2	0

*ns = no survey

Natural Resources, pers. comm.). We did not begin regular colony observations until 1 May, by which time 50% of the nests under observation already contained chicks. The last egg that we recorded was laid on 14 May, and the last hatching occurred on 10 June. The young began to leave the colony in mid-July, but returned to be fed by their parents. The last observation of a bird in the rookery was on 14 September. The birds remained in the vicinity until 23 December.

Meyers (1984) reported Wood Storks on the Savannah River Plant, Barnwell County, in 1983. He located birds twice in June, seven times in July, and once in August. In addition, he noted storks in Allendale County three times in August.

In 1984 and 1985 we observed Wood Storks on the Savannah River Plant (Table 1). On 6 June 1984, we used a fixed-wing aircraft to follow a bird from the Birdsville colony to the Savannah River Plant, a distance of 47 km. Storks were first observed in 1985 on the Savannah River Plant on 22 February (Docimo and Kondratiaff, biologists of Environmental and Chemical Sciences, Inc., New Ellenton, S.C.). In addition, in 1984 we found storks once in September at Kathwood Lake. In 1985 we saw storks in Aiken County five times in September and once in October, and they were recorded for 2 to 3 weeks in September and October at two sites in Barnwell County.

We have recorded Wood Storks in Aiken and Barnwell Counties, and Meyers (1984) has observed storks in Allendale County. We have records of birds in these areas from late February through early November, and in nearby east-central Georgia from late February through mid-December (Coulter, unpubl. obs.). Some that we saw may have been nonbreeding birds from Florida colonies. Other storks were from the Birdsville colony as evidenced by the bird that we followed from the colony to South Carolina.

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Piping Plovers Nesting at Cape Hatteras, N.C., in 1985

WM. WALKER GOLDER

Department of Biological Sciences

University of North Carolina at Wilmington

Wilmington, N.C. 28407

The status of Piping Plovers (*Charadrius melodus*) in North America has been a subject of increasing concern in recent years. Piping Plovers were Blue Listed in *American Birds* in 1982 (Tate and Tate 1983) and are a proposed candidate for the Endangered Species List (Sidle 1984). Piping Plovers are primarily winter residents in North Carolina, though they nest sparingly along barrier beaches from Pea Island to Morehead City (Potter et al. 1980). An isolated breeding site was discovered at Sunset Beach, N.C., in 1983 (LeGrand 1984), which is apparently the southernmost nesting site in North America. Early nesting records indicated Piping Plovers were nesting at Pea Island in 1901 and 1902 (Pearson et al. 1959). In recent years nesting sites have been discovered at Ocracoke Island (Hespenheide 1961), Shackleford Banks (Quay et al. 1970), Core Banks (LeGrand 1977), Portsmouth Island (LeGrand 1983), Sunset Beach (LeGrand 1984), and Cape Hatteras (Golder 1985). Nineteen pairs were located at Portsmouth Island during the 1983 breeding season (LeGrand 1983). This would be the largest concentration of breeding Piping Plovers ever reported in North Carolina.

Nine pairs of Piping Plovers were observed during the summer of 1985 while I was monitoring colonial waterbird colonies on the Cape Hatteras National Seashore. Pairs were located at Cape Point, the southern end of Hatteras Island, the northern end of Ocracoke Island, and the southern end of Ocracoke Island. Nests were found for three of these pairs, and one pair was observed with a brood of four chicks.

The first nest was located on sandy flats at the northern end of Ocracoke Island on 4 June 1985. This nest, containing three eggs, was on a small sandy lump measuring approximately 1.5 x 2.5 m. *Panicum amarum* was the only plant species present at the nest site. The nest itself had no lining and was approximately 0.3 m from the closest stand of *P. amarum*. On a second visit to the site, no nest or young could be found.

The second nest, containing three eggs, was located on 9 July 1985 at the southern end of Hatteras Island. This nest was at the base of a dune approximately 3.0 m in height. *Uniola paniculata* was the dominant plant species present on the dune. The unlined nest was approximately 0.1 m from the nearest stand of *U. paniculata*. All three eggs had hatched by 14 July 1985. Adults and young remained in the area for 10 days after hatching.

The third nest, containing two eggs and one newly hatched chick, was located on the sandy flats of Cape Point on 21 July 1985. Small, light-colored shell chips lined the nest, which was in a protected tern colony. No vegetation was present in the immediate area of the nest. All three eggs had hatched by 22 July, and chicks were seen in the area for 8 days after hatching.

Nests of Piping Plovers varied in their placement and appearance. Nests along the National Seashore in 1984 were all on open, sandy flats with no vegetation present near the nest (Golder 1985). In 1985 one nest was on open, sandy flats, but two nests were on dune slopes or sandy lumps with vegetation present within 0.3 m of the nests. The amount of nest lining also varied with the location of the nest. Nests found on dune slopes or sandy lumps with vegetation nearby had no lining, whereas nests on sand flats were lined with small, light-colored shell chips. Cairns (1982) found that Piping Plover nests on beaches with broken shells present were usually lined with small shell chips, while nests on bare sand had no lining.

The nesting population of Piping Plovers at Cape Hatteras was apparently stable between 1984 and 1985. Four nests and one brood of two chicks were found on the Cape Hatteras National Seashore in 1984 (Golder 1985). Three nests and one brood were present in 1985. With the exception of one found on Ocracoke Island in 1985, nests were in the same general areas in both years.

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First South Carolina Record of Sabine's Gull

CLAY C. SUTTON

PATRICIA TAYLOR SUTTON

129 Buck Avenue

Cape May Court House, NJ 08210

DENNIS ALLEN

WENDY BEARD ALLEN

Box 4, Belle Baruch Marine Lab

Georgetown, SC 29440

At 1130 EDT on 7 September 1985, we saw an adult winter-plumaged Sabine's Gull (*Xema sabini*) approximately 0.8 km off the mouth of North Inlet, Georgetown County, S.C. This sighting was made by four observers, none of whom had previously seen Sabine's Gull, but all of whom agreed in the identification. Numerous photographs were taken with a 135-mm lens. Although there are about five records of Sabine's Gull for North Carolina, to our knowledge this is the first occurrence of the species in South Carolina.

The bird was watched for about one-half hour as it followed a pod of Bottlenose Dolphins (*Tursiops truncatus*) that were feeding on large schools of menhaden (*Brevoortia* sp.). The bird circled over the surfacing dolphins as if waiting for feeding opportunities. At times it rested on the water and fell well behind the school. It then would fly to catch up to the school, and again circle the area of dolphin activity. The bird stayed with the dolphins the entire time it was under observation. It fed at times with a scattered flock of about 40 Royal Terns (*Sterna maxima*). The bird came from far off to circle our boat, at times as close as 6 m.

On 6 September 1985 in the same area, we saw a large dark tern, which was probably an immature Sooty Tern (*Sterna fuscata*). The occurrence of these two birds in inshore waters was not related to a storm, and 7 September was bright and sunny, cloudless with no wind. The ocean surface was glassy. The preceding few days had moderate westerly winds. A cold front had passed on 2 September 1985, but there had been no tropical depressions or easterly winds that might have pushed either of these pelagic migrants to shore.

The Sabine's Gull was an adult in full winter plumage. The yellow-tipped bill, forked tail, and wing pattern, including the black leading edge (outer primaries) and white triangular wing patch, were all clearly and repeatedly seen. Of interest is that instead of the oft-discussed wing pattern, it was the bright yellow-tipped bill that first drew our attention

to the bird and enabled us to separate it from the numerous Laughing Gulls (*Larus atricilla*) in the area.

The Sabine's Gull is a rarely seen but regular migrant in the pelagic waters of the tropical Atlantic. It has been seen inshore sporadically during spring and fall migrations on most of the Atlantic seaboard.

Four photographs that we took of this bird have been placed in the state bird collection at the Charleston Museum (ChM 1986.7.1-1986.7.4).

First Sighting of Mountain Bluebird Reported from Western North Carolina

JAMES C. BOOZER
1006 Asheville Highway
Box 627
Brevard, N.C. 28712

On the morning of 15 June 1985, I saw a male Mountain Bluebird (*Sialia currucoides*) perched on the top of my bluebird nestbox number 187 on the Dump Road at the Biltmore Estate, near Asheville, Buncombe County, N.C. The elevation of the site is approximately 2300 feet, and the habitat is rolling pasture land. Skies were clear, and the temperature was approximately 75°F. I studied the bird through binoculars at a distance of about 100 feet for 10 to 15 minutes. The bird once entered the empty box for 10 to 15 seconds and returned to the roof briefly before flying to distant trees. No singing was heard. Although I monitored Box 187 and others on the same trail frequently for the rest of the nesting season, I never saw the Mountain Bluebird again, did not find any aberrant young bluebirds, and have no reason to believe the species interbred with the resident Eastern Bluebirds (*S. sialis*).

The Mountain Bluebird was entirely sky blue, with the brightest and deepest color on the upperparts, wings, and tail. The bird was not banded. I am familiar with the species, having seen it in northwestern Canada and the western United States.

The Sixth Edition of the A.O.U. *Check-list of North American Birds* (1983) gives the eastern limit of the breeding range of the Mountain Bluebird as "northeastern North Dakota, western South Dakota, western Nebraska and central Oklahoma (Cleveland County)." The species winters, at least casually, eastward to eastern Kansas, western Oklahoma, and central Texas. It is also casual across Minnesota, Iowa, Wisconsin, Missouri, and southern Ontario to New York (east to Long Island) and Pennsylvania. Along the Gulf of Mexico it occurs casually through eastern Texas to eastern Louisiana (Baton Rouge area) and Mississippi (Grenada Dam). In addition, *The Kentucky Warbler* (61:31) reports a single Mountain Bluebird seen on 22 December 1984 on the Otter Creek Park Christmas Bird Count and later observed by many people. A male and a female were present simultaneously on 26 December, and the male was last reported on 13 January 1985. The park is in central Kentucky, just west of Elizabethtown. To the best of my knowledge, there are no published reports of the Mountain Bluebird from Alabama, Georgia, Tennessee, Virginia, or the Carolinas. Thus the Biltmore bird appears to represent the first sighting of the species not only in North Carolina, but also in eastern North America north of the Gulf Coast and south of Pennsylvania and Kentucky.



American Tree Sparrow (*Spizella arborea*) on rail of *Lady Liza* 20 km E of Edisto Island, 26 April 1985. (Photo by Pete Laurie)

Occurrence of American Tree Sparrow off the South Carolina Coast

PETE LAURIE

750 Copperhead Trail

Johns Island, S.C. 29455

On 26 April 1985 at about 1300 EDT, a sparrow flew aboard the South Carolina Wildlife and Marine Resources Department's research vessel *Lady Liza*. The vessel was 20 km S of Charleston Harbor buoys C3 and C4, and about 20 km E of Edisto Island. At first glance the bird appeared to be an American Tree Sparrow (*Spizella arborea*). Having grown up in northeastern Pennsylvania where in winter tree sparrows frequent feeders, I am quite familiar with the bird. For the next 2 hours, with a copy of Peterson's *Field Guide to the Birds of Eastern and Central North America* (1980) in hand, I watched the bird from distances of less than a meter as it hopped about the deck. I never before had the opportunity to study a bird from every possible angle at close range for such a length of time.

The rusty cap, white wing bars, and dark spot on the clear breast were distinctive. The throat was the same pale gray as the upper breast. A two-tone bill, dark above and yellow below, was very obvious. The bird was long and slim, quite different from the dark,

stocky Swamp Sparrows I see regularly. Throughout the winter and early spring I had watched both Field Sparrows and Chipping Sparrows at close range at my feeder. This bird obviously was larger, with a well-defined chestnut eye line and a longer tail. I concluded the bird was indeed an American Tree Sparrow.

At 1506, as the vessel entered Charleston Harbor, the bird flew strongly toward Fort Moultrie on Sullivan's Island.

Sprunt and Chamberlain (1970) list only seven records of the American Tree Sparrow in South Carolina. No specimen has been collected in the state. Since 1970 there are two reports of the tree sparrow in South Carolina: three on 18 December 1976 at Columbia (Chat 41:40), and one on 28 February 1973 at Charleston (Chat 37:54).

[EDITOR'S NOTE: With the acceptance of this photographic record by the South Carolina Avian Records Committee, the American Tree Sparrow has been added to the S.C. state list. Prior to this report the species was on the hypothetical list, as no specimen had been collected or photographed, and fewer than four independent, fully documented reports had been published in a journal.—WP]

Status of the Lincoln's Sparrow in South Carolina

W. POST
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

D.B. McNAIR
Route 1, Box 334
Six Mile, S.C. 29682

H.E. LeGRAND JR.
331 Yadkin Drive
Raleigh, N.C. 27609

In eastern North America the Lincoln's Sparrow (*Melospiza lincolni*) breeds from northern Quebec and central Labrador and Newfoundland south to northern New York, northwestern Massachusetts, and southern Vermont (A.O.U. Check-list 1983). Nonetheless, the first South Carolina sight record was not made until 1949 (Chat 26:77). The species remained on the state's hypothetical list until 1961, when the first specimen was collected (Chat 26:45). The absence of confirmed records until 1961 is related to the paucity of field workers in the state, as well as to the species' secretive behavior. A similar situation exists for Georgia, where between 1900 and 1953, only 25 birds were reported (Georgia Birds, T.D. Burleigh, 1958).

Changes in the methods and intensity of field ornithology, rather than changes in the species' distribution, lead us to re-evaluate the status of the Lincoln's Sparrow in South Carolina. Many more workers are now afield and are using bird feeders, mist nets, and better optical equipment to observe birds close at hand. During the nonbreeding period Lincoln's Sparrows seem to prefer damp thickets and brush piles (Georgia Birds, T.D. Burleigh, 1958), where their stealthy movements attract little attention. In some cases this species may be misidentified as a Song Sparrow (*Melospiza melodia*), a congener to which it bears a superficial resemblance.

The occurrence of the Lincoln's Sparrow throughout South Carolina is now validated by nine specimens (Table 1). We have analyzed these 9 specimen records, 5 bandings, and 47 sight records for seasonal and regional distribution (Fig. 1).

Lincoln's Sparrows are most numerous during fall migration (October-November). During fall migration it is possible that more individuals occur along the immediate coast

TABLE 1. South Carolina Specimens of the Lincoln's Sparrow.

Number	Age	Sex	Date	Locality	Collector	Comments
CM 62.31	Imm.	F?	7 Nov. 1961	Columbia	Mrs. E.D. Smith	First state specimen (Chat 26:45); collided with TV tower
CU 1290	Ad.	F	4 Oct. 1980	Clemson	P. Hamel	First upper piedmont specimen; netted
CU 1304	Imm.	M	25 Oct. 1980	Clemson	P. Hamel	Netted
CU 1307	Imm.	M	6 Nov. 1980	Clemson	S. Miller	Netted
CM 84.19	Imm.	F	4 Nov. 1983	Sullivan's Island	W. Post	First Coastal specimen; netted
WP 84.201	Imm.	M	3 Oct. 1984	Sullivan's Island	P.S. Coleman, W. Post	Netted
WP 84.202	Imm.	M	4 Oct. 1984	Mt. Pleasant	W. Post	Netted
WP 84.220	Imm.	F	30 Oct. 1984	Mt. Pleasant	W. Post	Netted
WP 84.225	Imm.	M	6 Nov. 1984	Mt. Pleasant	W. Post	Netted

and near the Appalachians than in the central portion of the state. This is probably true of many migrants, which are often funneled along natural barriers. The species winters in the upper piedmont and on the coastal plain in small numbers (Fig. 1). Usually only one individual is seen at a time. We can find no winter records for midstate (lower piedmont, upper coastal plain). This could be an artifact of insufficient observer activity. A few Lincoln's Sparrows are expected to winter in the central part of the state, because of the presence of winter records both upstate (upper piedmont) and downstate (coastal). The meager data may indicate a slight increase of numbers during spring migration (April-May) in the upper piedmont, but indicate no parallel increase in other areas.

The earliest Lincoln's Sparrow fall arrival dates are 3 October, for both the coast (Sullivan's Island) and the interior (Clemson). The latest spring record on the coast is 30 April (Charleston), and in the interior, 11 May (Clemson).

One bird, probably the same individual, was seen repeatedly by P. Nugent and others at Nugent's feeder in Charleston (photograph on file at the Charleston Museum). This Lincoln's Sparrow first appeared at the feeder on 7 December 1972 (Amer. Birds 27:603). The same or another individual was seen from 13 January 1974 through 5 April 1974 (Amer. Birds 27:628; pers. comm., P. Nugent; photos taken). A Lincoln's Sparrow again appeared from 9 December 1974 to 30 April 1975 (Chat 39:63). The last sighting at this feeder was a bird during "winter" 1975-1976 (Chat 40:73).

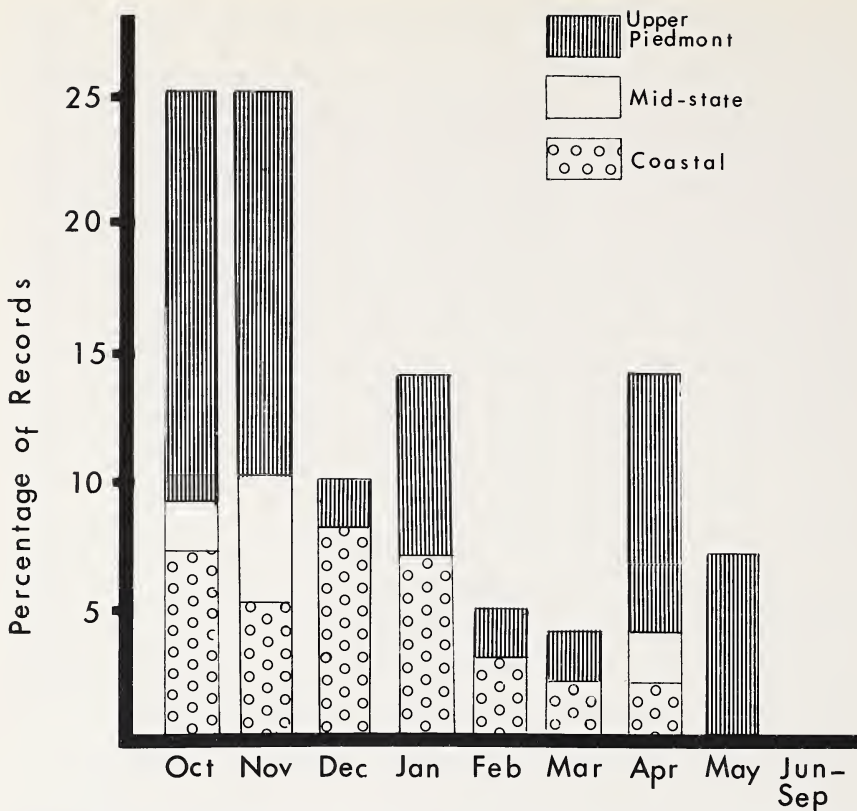


Fig. 1. Regional and seasonal distribution of the Lincoln's Sparrow in South Carolina. Based on 61 records. The record citations on which this figure is based are on file in the Charleston Museum.

Another individual visited a banding station at York, S.C., and was banded on 17 April 1983 by W. Hilton Jr. The bird had a cloacal protuberance, indicative of an enlarged reproductive tract. The bird remained until 24 April. That Lincoln's Sparrows become reproductively active before leaving the state may also be indicated by the sighting of a singing bird on 18 April 1980 at Clemson (Chat 44:118).

In summary, although the species is common to the north, it largely bypasses South Carolina during migration. Lincoln's Sparrows migrate west of the southern Appalachians and regularly winter on the East Coast only as far north as Georgia, and perhaps northwestern South Carolina. Further field work, particularly in midstate, is needed before the status of this species in South Carolina is fully understood. A few winter records should be expected in midstate, to fill the gap in the winter range. However, because the species is rare in the state, and because it is very secretive, any revelations may be slow to appear. Workers manning feeding and banding stations are in the best position to contribute to our knowledge of this species' distribution in the Carolinas.

Acknowledgments. We thank the many ornithologists who have published or made available to us their field records for the Lincoln's Sparrow, particularly S.A. Gauthreaux Jr., P. Hamel, W. Hilton Jr., and P. Nugent. We are especially grateful to S. Miller, of Clemson University, who prepared three Lincoln's Sparrow skins.

ADDENDUM

In the fall of 1985, an unusually large number of Lincoln's Sparrows were seen in northwest South Carolina. C.W. Wooten and S.A. Gauthreaux saw 23 individuals near Clemson during the period 27 September to 5 December. This includes a group of five seen in the same bush on 9 October.

On the coast, three more Lincoln's Sparrows were netted at Mt. Pleasant: On 6 October, one was banded and one was collected (Field number WP85.007), and on 27 October another one was collected (WP85.139).

First Record of Lesser Goldfinch in the Carolinas

RAMONA R. SNAVELY
115 Plymouth Avenue
Winston-Salem, N.C. 27104

On 27 September 1985 at about 1700, I observed a bird unfamiliar to me. The bird was small, approximately $3\frac{1}{4}$ to 4 inches long. It was olive-green on the head, back, and rump—similar to the coloring of an immature Tennessee Warbler (*Vermivora peregrina*). The wings appeared black with prominent white markings in them. Some of the flight feathers were edged with white, and there was an obvious, bright white wing patch. The tail, which appeared to be somewhat forked, was uniformly black except for the green anterior portion where it joined the olive-green rump. The nape had a gray wash, and there were faint, darker, longitudinal markings on the back. The breast was clear and completely yellow. No eye stripe was evident, but there was a very faint hint of an eye ring. The bill was short and conical, very similar to that of the American Goldfinch (*Carduelis tristis*). The legs and feet were uniformly slate-gray.

First observation was made while the bird was eating a dogwood (*Cornus florida*) berry. It made several gulping motions as if having difficulty swallowing the berry. Afterward, the bird was attracted to two different drip fountains where it drank and bathed for several minutes. For about 2 minutes it remained on the ground, near a fountain, drinking water from a cupped leaf.

My husband and son watched the bird with me, and we attempted to list all identifying marks. Total observation time was about 5 minutes as the bird moved from the dogwood tree to the drip fountains. Distances from the bird ranged from 15 to 25 feet. We had a clear, unobstructed view in excellent light and were all using 7x50 Nikon optics.

Considerable migration activity was evident on the day of sighting; a front was moving through the area.

After extensive research, the only bird I found in my guides similar to the one observed was the green-backed race of Lesser Goldfinch (*C. psaltria*). After analyzing the representative study skins at Utah State University, Tove suggested the bird in question was possibly an immature male of the green-backed race.

No records exist of Lesser Goldfinch sightings in the southeastern states. Potter, Parnell, and Teulings (1980) make no reference of the bird in their *Birds of the Carolinas*. Farrand (1983) states the green-backed form is normally found in the western part of the Lesser Goldfinch range (California, Arizona, Sonora, Mexico, and west Texas). According to the A.O.U. *Check-list* (1983), the Lesser Goldfinch is accidental in Cameron, Louisiana, and Elizabethtown, Kentucky—the easternmost sightings of this species.

Acknowledgments. Harry E. LeGrand Jr. and Michael H. Tove graciously reviewed my data and suggested submission of this report.

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BOOK REVIEW

FINDING BIRDS IN CARTERET COUNTY

John O. Fussell III. 1985. Published by the author, P.O. Box 520, Morehead City, N.C. 28557. Illus. by Carolyn Hoss. Softcover. 96 p. \$5.

Privately published by the author, this guide is well organized, adhering for the most part to the format of Claudia Wilds's *Finding Birds in the National Capital Area*. After a brief geographical sketch of the county and remarks about how to use the book, the author lists the bird species, in annotated fashion, known to have occurred in Carteret County. Most of these data are the personal results of Fussell's field work, with a pittance contributed by Christmas Count participants and other bird students. The site guide follows and contains 24 specific areas, with good maps where indicated. This section's finale is a useful commentary on pelagic birdwatching in the area. The book closes with a 5½-page discussion of Birds of Special Interest.

The meat of this work is, as it should be, the Site Guides portion. More than half of the total pages are devoted to counseling the reader with suggestions about how to best accomplish certain goals, such as the most appropriate timing for wading the creek to get to Davis Impoundment or the best wind conditions for a successful trip to Cape Lookout during fall landbird migration. Fussell's wisdom, developed during a lifetime in Carteret, is demonstrated repeatedly in his advice to the newcomer.

The shortcomings of this guide, though few, require some comment. The illustrations vary greatly in quality and, except for the maps, seem to have little relevance to the text. The only omission of a species known to me is that of a Black-headed Grosbeak record (March-April 1984). Most authors include bar graphs showing seasonal distribution in such a text as this; Fussell chose to omit this handy, though sometimes misleading, feature.

With the publication of this book, John Fussell has opened the doors to one of North Carolina's richest bird communities. Carteret County, Man's thoughtlessness notwithstanding, remains attractive to a diverse and fascinating spectrum of bird species; the author is clearly the authority for this segment of coastal North Carolina.—E. WAYNE IRVIN



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No. 3



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The Chat

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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable.....	Louis C. Fink, 100 Clyde Morris Blvd., No. 155, Ormond Beach, Fla. 32074
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—A Yellow-breasted Chat appeared on the first issue of *The Chat*, a mimeographed bulletin that was issued in March 1937. The drawing is by Patricia Pittman, who was then employed as a secretary at the North Carolina State Museum of Natural History.

Drawings on pages 65, 90, and 93 of the present issue were contributed by Roger Tory Peterson, H. Douglas Pratt, and John Henry Dick, respectively. Peterson's drawing and photographs on pages 63, 68, and 70 are reproduced by permission of the N.C. State Museum. The photograph of Alexander Spurr Jr. on page 73 was taken by Allan D. Cruickshank; the one of Fred May on page 79 by Jim Sparks of Lenoir, N.C.; and the one of Charlotte Hilton Green on page 79 by Bernadette Hoyle. Other photographers, if known, are acknowledged in the cutlines.

CORRECTION—Oliver H. Orr Jr. has informed the editor of an error on page 30 of his article "T. Gilbert Pearson: The Early Years" (*Chat* 50:29-41). Pearson's remuneration during his student years at Guilford College was \$50 per year, rather than per month, in addition to room, board, and tuition.

A Brief History of Carolina Bird Club

ELOISE F. POTTER

Nearly every issue of *The Chat* published since 1950 has carried the following statement: "Carolina Bird Club, Inc., is a non-profit educational and scientific association founded in March 1937 and open to anyone interested in the study and conservation of wildlife, particularly birds." As the 50th anniversary of the founding of the club approaches, it seems appropriate to summarize the history of the bird club and recognize some of the leaders in the fields of ornithology, wildlife education, and conservation in the Carolinas during the past five decades.

In 1972 **Charlotte Hilton Green**, a charter member of CBC, wrote a four-part article "Carolina Bird Club—Past and Present," which appeared in *Wildlife in North Carolina* (Green 1972a-d). She credits the Rev. **John H. Grey Jr.**, then pastor of the new West Raleigh Presbyterian Church, with voicing the first proposal for organizing a state bird club. Members of the Raleigh Natural History Club were meeting at the North Carolina State Museum of Natural History—actually in the Board Room of the North Carolina Department of Agriculture—when the young minister inquired, "Aren't there enough of us here interested in birds to be the nucleus of a bird club? . . . Surely North Carolina needs one." A member of the 7-year-old Virginia Society of Ornithologists, Grey wanted to share his enthusiasm for bird study with the people of North Carolina. Those interested in forming such a club were invited to remain after the meeting.

Seven stayed. In addition to John Grey, they were **H.H. Brimley**, director of the State Museum, and his brother **C.S. Brimley**, state entomologist, two of the authors of *Birds of North Carolina* (Pearson et al. 1919); **Harry T. Davis**, of the museum staff (later director); Dr. **Carey Bostian**, a professor of zoology at N.C. State College; Mrs. Green, an active member of the Raleigh Woman's Club and nature columnist for *The News and Observer*; and a seventh person whose name is now unknown. Dr. Bostian later served as chancellor of N.C. State University, formerly N.C. State College, where a biology building is named in his honor. Still a Carolina Bird Club member, he now lives at Chapel Hill, N.C. Mrs. Green continued writing her "Out-of-Doors in Carolina" column for 42 years. Now probably CBC's oldest living member at age 97, she resides in a retirement home at Tarboro, N.C., and occasionally visits friends in Raleigh.

As the seven discussed plans for forming a local bird club, Mrs. Green suggested that Grey become its first president. "No," he responded, tossing the job back to her, "I want to edit a bird bulletin." As a result of this meeting, a call went out, through newspapers and other media, for interested persons to join Raleigh Bird Club. The fledgling club immediately started sending publicity statewide to invite people interested in forming a North Carolina Bird Club to meet at the Raleigh Woman's Club on 6 March 1937.

Seventy-five people attended the organizational meeting of the North Carolina Bird Club (Chat 1:2-3). They came from all parts of the state: Asheville, Statesville, Winston-Salem, Greensboro, Southern Pines, Pine Bluff, Sanford, Oxford, Cary, Raleigh, Rocky Mount, Wilson, Tarboro, Greenville, and Washington. Others came from Virginia and New York. The Rev. **J.J. Murray, D.D.**, of Lexington, Virginia, was the featured speaker.

He told about the work of VSO and the publication of its bulletin. Dr. Murray, who served as editor of *The Raven* from its inception in 1930 through 1969—a remarkable 40-year tenure—said that any state could maintain such a club if 12 people were vitally interested in the work and 50 more were increasing their interest. The group voted to organize a state club. With Mrs. Green presiding, a proposed constitution was presented, amended, and adopted. Mrs. Green appointed a nominating committee consisting of H.T. Davis and C.H. Bostian of Raleigh, Miss **Nancy Eliason** of Statesville, **A.D. Shaftesbury** of Greensboro, and **J.J. Sigwald** of Wilson.

Following a luncheon served in the Woman's Club, Dr. Murray again spoke to the group. Using the topic "Wild Wings," later to become the title of his 1947 book, he spoke of ornithology as an art, a science, and a sport.

Presiding over the afternoon session was Dr. **Z.P. Metcalf**, head of the Department of Zoology and Entomology at N.C. State College, teacher of ornithology, and founder of the wildlife curriculum there in 1937. The rate of annual dues was set at \$1, and the report of the nominating committee was adopted. The first officers of the North Carolina Bird Club were:

President:	Clement S. Brimley N.C. Department of Agriculture, Raleigh
Vice-presidents:	Francis H. Craighill, D.D. Church of the Good Shepherd, Rocky Mount Nellie F. Sanborn President, Southern Pines Bird Club, Southern Pines Ethel F. Finster Asheville Teachers' College, Asheville
Secretary, Treasurer, and Editor:	John H. Grey Jr. West Raleigh Presbyterian Church, Raleigh

The membership voted to elect as a charter member **T. Gilbert Pearson** of New York, president of the International Committee for Bird Protection, principal author of *Birds of North Carolina*, and former president of the National Association of Audubon Societies. A congratulatory telegram from Pearson arrived too late to be read to the group. It said: "Greetings and best wishes to North Carolina ornithologists meeting in Raleigh today. I shall eagerly follow your every movement and rejoice with you at every success." Success came quickly. By 6 May 1937, the deadline for accepting charter members, 101 people had paid annual dues of \$1 to become charter members of the North Carolina Bird Club.

The first issue of *The Chat*, run off on the mimeograph machine in John Grey's church office, appeared in March 1937 and was mailed to 200 individuals and libraries throughout the United States. In a foreword the editor committed the bulletin to publishing popular as well as scientific articles, and the material in the 13 mimeographed pages includes some of each. For example, at the top of page 9, C.S. Brimley, in an abstract of one of the several scientific papers presented during the March 1937 meeting, updated his list of the Raleigh birds, which had been published in the *Journal of the Elisha Mitchell Scientific Society* in November 1930. At the bottom of the same page, **Nellie F.**



Clement S. Brimley (insect net in hand), Roxie Collie (Laybourne), and John H. Grey Jr. relax beside Yates Millpond during a field trip to the Swift Creek area of Wake County, N.C., on 22 September 1942. Brimley, an entomologist, was the first president of the North Carolina Bird Club, now Carolina Bird Club. Grey, a Presbyterian minister, was the first editor of *The Chat*. Yates Millpond is now owned by N.C. State University and operated as a field station. (Photo by William Craven)

Sanborn provided the bulletin's first "backyard birding" story—an account of seeing a yellow-crowned Ruby-crowned Kinglet at her kitchen window. The Field Notes section had paragraphs of distributional data from six localities.

One of the contributors to the first issue of *The Chat* was **Roxie Collie (Simpson) Laybourne**, then Miss Collie, a recent graduate of Meredith College and an employee of the N.C. State Museum. Today Mrs. Laybourne is internationally known as "the feather lady" for her research on the structure of down feathers (Lipske 1982). Several years ago she told me how *The Chat* received its name. John Grey, Charlotte Hilton Green, and C.S. Brimley were talking about what to call the proposed bulletin. Finally C.S. said, "We're just sitting here chatting. Why don't we call it *The Chat*?" That is the name adopted in the constitution on 6 March 1937, and the Yellow-breasted Chat that appeared on the first issue, and many successive issues, was drawn by **Patricia Pittman**, then a secretary at the N.C. State Museum.

Without detracting in the least from the dedicated efforts of the first officers, I must point out that the founders chose a propitious time to organize a bird club. The garden club movement had already gained momentum in the South, and its members were carrying the message of conservation into the public schools. The first such club in Raleigh was founded in 1925, and Mrs. Green's column in the *Raleigh News and Observer* was, in her words, "sort of a by-product of the local garden club" (Green 1972a). In neighboring states bird clubs had been founded in Tennessee (1915), Kentucky (1923), Virginia (1930), and Georgia (1936). Throughout the country, the 1930s was a time of growing awareness of the need to protect birds, especially the migratory hawks that have a low rate

of reproduction and were often shot in huge numbers for sport or for bounty. In response to this situation, Hawk Mountain Sanctuary was founded in 1934 (Brown 1947). The first edition of **Roger Tory Peterson's** *Field Guide to the Birds* came out the same year, greatly simplifying the problems of bird identification. And in 1936 Doubleday reissued *Birds of America*, the 1917 work edited by T. Gilbert Pearson and illustrated with 106 plates in full color by **Louis Agassiz Fuertes**. As part of **Franklin D. Roosevelt's** New Deal, the National Wildlife Refuge System was expanded rapidly, with Lake Mattamuskeet and Pea Island being added in the mid-1930s. Construction of the Blue Ridge Parkway began at Cumberland Knob in Surry County on 11 September 1935. North Carolina promptly joined the federal government's conservation efforts by establishing additional new parks and refuges. Having visitor facilities in formerly inaccessible places such as Pea Island and the Great Smoky Mountains opened new opportunities for bird study by professionals and amateurs alike. It was high time for North Carolina to have a bird club.

The bird club's first scheduled field trip was on Thursday, 17 August 1939 to see the migratory waterfowl at the newly established Pea Island National Wildlife Refuge (Quay and Quay 1939, Green 1972a). "We rode," Mrs. Green recalled, "standing, in an open truck—the same one that **Eleanor Roosevelt** had toured the place in!" **Sam Walker**, the refuge manager, drove the truck. Thirty members participated.

At the Second Annual Meeting (Chat 2:1,27-28), which was held at the O'Henry Hotel in Greensboro, 23 April 1938, C.S. Brimley turned the presidency of the young bird club over to Dr. Francis H. Craighill, who is best remembered in ornithological circles for having reported the Kirtland's Warbler three times from the Rocky Mount area. The luncheon was 75¢ per plate, and the program featured moving pictures in color of "The Bird Life of Lake Mattamuskeet," apparently the first colored movies to be shown of North Carolina wildlife. The constitution was amended to divide the work of secretary-treasurer from that of the editor. **Lacy L. McAllister** of Greensboro was elected secretary-treasurer, and John Grey remained editor. A proposal to make the next annual meeting a 2-day event (beginning on Friday afternoon with a papers session, followed by a banquet and a Friday evening session, and ending with a field trip on Saturday morning) was referred to the Executive Committee.

By the fall of 1938 the Brimley brothers and Dr. Pearson, assisted by Roxie Collie Simpson and encouraged by John Grey, were busy working on a revised edition of *Birds of North Carolina*, using reports from *The Chat*. This book, finally published in 1942 following delays caused by a printers' strike, features 17 original text illustrations by the young Roger Tory Peterson. Pearson commissioned the work, but Peterson, according to correspondence in the files of the N.C. State Museum, refused to accept payment. Houghton Mifflin permitted use of plates from Peterson's *A Field Guide to the Birds*. The color plates by **Robert Bruce Horsfall** and the unsigned illustrations by **Rex Brasher** were taken from the 1919 edition. The North Carolina Bird Club contributed funds to make possible the use of additional color plates, and **Grace Anderson** spearheaded the campaign for prepublication subscriptions. A fifth of the 5,000 copies were sold by the time the book was released, and it was out of print by 1952.

The third president of the N.C. Bird Club was **Claudia Watkins Hunter** of Henderson, a strong supporter of local bird clubs and the Municipal Bird Sanctuary movement. She and **Mrs. A.J. Davis** organized the Henderson Bird Club on 10 May



A female Anhinga is one of the 17 original text illustrations Roger Tory Peterson contributed for use in the 1942 edition of *Birds of North Carolina*. Peterson and the principal author, T. Gilbert Pearson, were long-time associates in National Audubon Society.

1937. The first president was **James P.B. Connell**, who trapped and banded hundreds of Chimney Swifts. In September 1937 Henderson became the first town in North Carolina to be officially declared a Municipal Bird Sanctuary. On 5 November National Audubon Society Director **Alexander Sprunt Jr.**, who had been born in the local Presbyterian Church manse, gave an address in Henderson that was broadcast nationally by the Associated Press. As a result, requests for information on the Municipal Bird Sanctuary project came from as far away as California (Henderson Bird Club archives).

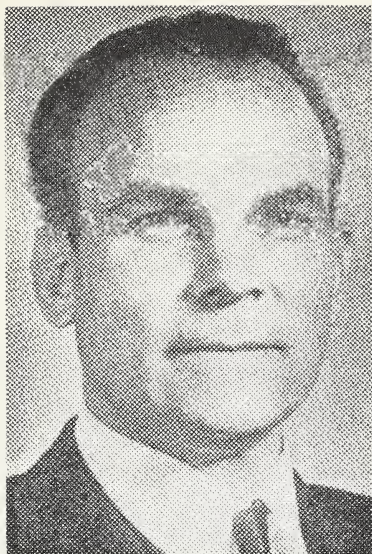
Miss Hunter took office in 1939 during the Third Annual Meeting (Chat 3:30-32), which was held at Raleigh. Dr. Bostian was elected secretary-treasurer; John Grey remained editor. A papers session was held at the Woman's Club on Friday afternoon. When heavy rains and a college test kept some of the speakers away, John Grey showed two reels of "Our Wildlife Resources," produced by the Biological Survey, and **Churchill**

Bragaw showed a color film taken at Orton Plantation. At the 6 p.m. banquet, the Rev. Dr. Craighill gave a Presidential Address on "The Friendly Birds," which was published in *The News and Observer*. The evening session was attended by about 150 people, who were treated to a three-part program. T. Gilbert Pearson used colored lantern slides to illustrate "The Odyssey of a Bird Lover," a report on his activities on behalf of bird protection. Miss Nancy Eliason showed movies of the Ruby-throated Hummingbird. And Grey showed another movie, "The Breeding Birds of Cobb's Island, Virginia." The Saturday morning field trip was a huge success, with 89 species reported—at that time the most ever observed in Raleigh in one day. About 25 people went by car to Lake Raleigh and Swift Creek, returning about noon for lunch together at West Raleigh Presbyterian Church as guests of the Raleigh Bird Club. Earlier plans to have lunch outside at "The Willows," the new home of Prof. and Mrs. W.R. Green, were abandoned because of threatening rain.

The Fourth Annual Meeting (Chat 4:40-42) was held at Henderson, 26 and 27 April 1940. The Friday afternoon papers session ran so long that two speakers had to relinquish their places on the program. At the banquet, attended by more than 100 members and guests, the nominating committee recommended the re-election of the present officers with the addition of **Mrs. E.G. Flannagan** of Henderson as secretary; Dr. Bostian remained treasurer. In her Presidential Address, Miss Hunter outlined a 5-year program for the development of the N.C. Bird Club. Goals included reaching a membership of 1,000, establishing an Endowment Fund, employing an executive secretary, and enlarging and enriching *The Chat*. The public program was held at Henderson High School. **Thomas L. Quay** introduced the guest speaker, **Harold S. Peters** of Charleston, S.C., Atlantic Flyway Biologist for the U.S. Biological Survey. Peters, who had worked with Quay on Mourning Dove research, was one of the first biologists to use an airplane to track migrating waterfowl. About 30 people participated in the Saturday morning field trip, afterwards gathering for a late breakfast at the home of Miss **Mariel Gary** and her sister **Mrs. S.R. Harris Jr.**

From the beginning, bird club members realized there were big gaps in their knowledge of North Carolina birds, particularly the breeding species. To help fill some of the gaps, **Elmer Brown** of Davidson College distributed nest record cards for the 1940 breeding season (Chat 4:64). Brown also prepared the monthly Check List that was distributed to members with the January 1941 *Chat* in an attempt to gather data on a regular basis, not just from special field trips (Chat 5:16). The first report of the Committee on Records was presented by C.S. Brimley at the spring meeting in 1941 (Chat 5:36).

In 1941 the field trip was to Lake Mattamuskeet, and the Fifth Annual Meeting (Chat 5:33-38) was at Statesville, on 2 and 3 May. **Archie D. Shaftesbury** was elected president. The N.C. Bird Club then had 531 members spread over 57 counties. Of the 26 local units, the Statesville Audubon Club, with 71 enrolled, was the largest. Dr. **Ben F. Royal** of Morehead City, the newly elected third vice-president, presented a paper on the old-time campaigns against the gulls and terns that nearly extirpated the Least Tern. Following this, he made a plea for the protection of the heron and egret colony on an island between Morehead City and Beaufort, stating that some local people down there like egret squabs for food. The high point of the meeting was the evening session held in the ballroom of the Vance Hotel. Approximately 300 people came to hear **Arthur**



Archie D. Shaftesbury, Ph.D., taught biology at UNC-Greensboro. He was a charter member of the bird club, its fourth president, and the second editor of *The Chat* (1944-1951).

Stupka, park naturalist, give a slide-illustrated talk on the Great Smoky Mountains National Park.

Miss Grace Anderson, of Statesville, was elected president at the Sixth Annual Meeting (*Chat* 6:33-36), held 8 and 9 May 1942 at Greensboro. Concluding the activities at the Friday evening banquet was an "Information, Please" program on bird knowledge. **Henry Magie** of Winston-Salem, vice-president for the western division, took the part of Clifton Fadiman, and Miss **Etta Schiffman**, of Greensboro, was the judge. Charlotte Hilton Green won the prize, a box of salt. The Friday evening lecture was presented by T. Gilbert Pearson, who described his experiences "Birding Below the Line" during a recent 10-month tour of nine South American countries.

The long-awaited new edition of *Birds of North Carolina* became available for sale in the summer of 1942.

A major project of the bird club during these early years was to distribute, in cooperation with the Conservation Department of the N.C. Federation of Women's Clubs, two copies of Audubon Circular 25 to every schoolroom in the state. One side of the sheet showed how hawks look overhead, and the other side showed what hawks eat. Thus each teacher needed two copies so both sides could be posted on the bulletin board. Along with the circulars went thousands of copies of "Protect Our Hawks and Owls," written by Harold Peters and provided by the U.S. Fish and Wildlife Service. According to Mrs. Green (1972a), Oxford rated "tops" with the publications displayed in every classroom in town. Other educational materials were distributed, and the N.C. Bird Club strongly supported the Audubon Junior Clubs.

Following Miss Anderson's resignation, H.H. Brimley was elected president at the first fall meeting of the N.C. Bird Club, held at the N.C. State Museum on 30 October 1942. He served until May 1944, there being no annual meeting in 1943 because of wartime gasoline shortages. By March 1942 the club was sponsoring the selection of a





Clara Hearne, seventh president of the bird club, served during the difficult wartime years (1944-1946). Miss Hearne was supervisor for the elementary schools of Roanoke Rapids, N.C.

state bird (Chat 6:21-22). School children and members of nature clubs were urged to vote for the species of their choice. The one receiving the most votes would be recommended to the General Assembly for official adoption. Although the legislature had already selected the chickadee, members quickly bowed to popular opinion and voted in favor of the cardinal. The act was passed 4 March 1943.

T. Gilbert Pearson died 3 September 1943 at age 70.

Early in 1944 John Grey accepted the pastorate of a church at Charlottesville, Virginia. Although Dr. Grey never lived in North Carolina again, he kept in touch with friends here until his death in 1971, occasionally participated in coastal bird-banding projects, and never lost interest in the bulletin he founded. During Dr. Grey's 7 years as editor, *The Chat* grew from a mimeographed bulletin (issued six times a year) to a substantial printed journal (issued five times a year) with a bright yellow cover featuring the same drawing of the Yellow-breasted Chat that appeared on the first page of the first issue.

Archie D. Shaftesbury, a biology professor at the Woman's College of the University of North Carolina at Greensboro and founder of the Carolina Marine Laboratory at Beaufort, N.C. (Potter 1967), succeeded Grey as editor and continued the same format for several years, finally substituting cover photographs for the chat drawing on a regular basis in 1948. Dr. Shaftesbury and **Clara Hearne**, elementary supervisor for the Roanoke

Roxie Collie (Laybourne), left, and Harry T. Davis, director of the N.C. State Museum from 1937 to 1966, examine the fetus removed from a female True's Beaked Whale that washed ashore in 1944. Davis served as president of Carolina Bird Club (1962-1964) and edited the CBC Newsletter. (Photo by Bill Baker, N.C. Dept. Conservation)



H.H. Brimley, first director of the N.C. State Museum, spent his retirement years helping T. Gilbert Pearson revise *Birds of North Carolina*, serving as president of the bird club (1942-1944), and preparing zoological specimens for display. Here he is working on the model of an adult female True's Beaked Whale that still hangs, along with her articulated skeleton and a model of her fetus, in the museum's Marine Mammal Hall.

Rapids schools and the N.C. Bird Club's seventh president, provided leadership during a very difficult period. Nearly all of the energetic young men of the club were by now in military service, and some—such as Churchill Bragaw, charter member of N.C.B.C. and manager of Orton Plantation from 1937 to 1942 (Anon. 1944)—did not survive the war. Lists of members in service (Chat 9:17-19,34) included **Joseph D. Biggs**, charter member and former director of the "Bughouse Laboratory" at Washington, N.C.; **Ralph W. Brimley**, charter member and former treasurer of the club; Lt.(jg) **Coit M. Coker**, a charter member from Chapel Hill, who was wounded in the Normandy invasion; **William M. Craven**, charter member from Raleigh, then doing his bird watching in New Caledonia; **Joe Jones**, charter member from Chapel Hill; **Helen Myers** of Lenior, then with the Red Cross in New Guinea; **H.T. (Thomas) Odum** (brother to E.P. Odum; an ecologist, later of the Osborn Zoological Laboratory at Yale University) of Chapel Hill; Lt.(jg) **T.L. Quay**, who was in New Guinea; Capt. **Henry A. Rankin Jr.**, a charter member from Fayetteville, then stationed in Washington, D.C.; John J. Sigwald, charter member and former vice-president from Wilson; **James L. Stephens Jr.** from Lumberton, then in the South Pacific; and Maj. **Robert H. Witherington**, charter member from Winston-Salem, then with 8th Infantry Headquarters. The annual meeting was suspended again in 1945 to conserve gasoline. Instead, the Executive Board met in the homes of members to carry on the business of the club. Hostess for the first such meeting was **Zora P. Jenson**, of Chapel Hill, an outstanding bird bander and club president from 1946 to 1948. Mrs. Green and **Elizabeth and Edwin Clarkson** of Charlotte opened their homes for similar meetings.

In 1944 Mrs. Clarkson published *Birds of Charlotte and Mecklenburg County, North Carolina*, which she updated in 1965 and 1970, the last publication being for the benefit of Mecklenburg Audubon Society.

The first *Chat* edited by Dr. Shaftesbury contains a paper by **John Trott Jr.**, of New London, N.C. John won the N.C. Academy of Science Essay Contest with "Bird Behavior at the Nest" (Trott 1944). The \$20 first prize was offered by Mrs. Clarkson. After attending Pfeiffer College and graduating from the University of North Carolina at Chapel Hill, John moved to Virginia, where he became known as an outstanding teacher and nature photographer whose work has appeared in many books and magazines, not to mention on quite a few *Chat* covers. During the 1970s John also operated the Burgundy Nature Camp in the mountains of West Virginia. He is now associated with the Madeira School at Greenway, Virginia. When the call went out for photographs to illustrate *Birds of the Carolinas*, John responded promptly and generously. His male cardinal graces the dust jacket. In the fall of 1982, Pfeiffer College honored Trott with a one-man show of his nature photographs. Among the Carolina Bird Club members present for the occasion were Edwin and Elizabeth Clarkson. Two other CBC members who strongly influenced John's life were **Edna Lanier Appleberry**, who gave him her back issues of *The Auk*, and **Roxie Laybourne**, who took him, **Oscar Williams**, and **Norman B. McCulloch Jr.** on a fabulous bird-study trip to Baldhead, Battery Island, and Orton Plantation in June 1945 (McCulloch 1945). Norm and Oscar were schoolmates of mine at Broughton High, as were most of the other boys who went afield with Roxie during her years in Raleigh. If I had not been so busy hunting wild flowers in those days, I could have been one of "Roxie's boys," too. I can recall seeing H.H. Brimley during my many visits to the State Museum, but I never had the nerve to speak to him—one of my most regrettable lost opportunities. The Brimley brothers died in 1946, a decade before I discovered the pleasure of bird watching.

The Eighth Spring Meeting of the N.C. Bird Club (Chat 10:46-49) was held 11 and 12 May 1946 at Boone. Mrs. O.F. (Zora P.) Jenson of Chapel Hill was elected president. **Bob Holmes III** of Mount Olive (now Dr. Robert P. Holmes III of New Bern) won first prize in the N.C. Academy of Science Ornithology Essay Contest. The Fall Meeting (Chat 10:78-79) was held at Greensboro with Vice-President **Robert Wolff** of Goldsboro, an executive with the Boy Scouts of America, presiding.

At the time of its 10th anniversary, the bird club had a statewide membership of nearly 800, and there were 22 local bird clubs (Green 1972c). Many cities were in the process of becoming bird sanctuaries, and outstanding bird and conservation films and lectures were being presented in many parts of the state. The May 1947 meeting (Chat 11:53-55) at Atlantic Beach and Morehead City was especially exciting. Mrs. Jenson was re-elected president. The featured speaker at the banquet was **Carl W. Buchheister**, vice-president of National Audubon Society. Later president of the Society, Buchheister retired to Chapel Hill where he and Dr. Bostian became neighbors. Mr. Buchheister presented another program for CBC at Raleigh in 1981.

Also on hand that memorable 1947 weekend were Alexander Sprunt Jr., southern representative of Audubon, and **E. Burnham Chamberlain**, curator of zoology at The Charleston Museum. Even the famous author-naturalist **Edwin Way Teale** and his wife **Nellie** were there. While criss-crossing their way "north with the spring," they had stopped to visit friends at Chapel Hill and decided to accept an invitation from Dr. **Richard L.**

Weaver, of the N.C. Resource-Use Education Commission, to attend the coastal meeting. According to Mrs. Green (1972c), the Teales were thrilled with the bird club, its outstanding program, and the state as a whole.

Following the convention, the indefatigable Edna Appleberry served as the Teales' guide to the natural history of Wilmington and the Cape Fear region. Much of this is told in *North with the Spring*, the first of Teale's four seasonal books and now a classic in the natural history literature.

In spite of the distinguished guests, "Roxie's boys" stole the show at the May 1947 meeting. The youths had grown up with the N.C. Bird Club and had become quite proficient in bird study. John Trott, then a junior at UNC-CH, won the competitive Audubon scholarship and spent the entire summer at the Audubon Nature Camp at Medomak, Maine, serving as a student assistant.

At the suggestion of Mrs. Green, the bird club established a \$100 scholarship for teachers who wanted to attend the Maine Audubon Camp. Mrs. **Margaret Y. Wall**, a school principal from Greensboro, was the first recipient. She made such an excellent impression on R. T. Peterson, **Allan D. Cruickshank**, Alex Sprunt, and other Audubon leaders that she was invited to join the staff the next summer (1948) and held that summer position for 14 years. For many years Margaret led Greensboro students in the Outdoors School Classes at Umstead State Park. This project was featured in *Nature Magazine*, August-September 1958 (Green 1972c). A Life Member of CBC, Ms. Wall served as treasurer, president, and chairman of the Scholarship Committee. She died in 1985 in St. Petersburg, Florida.



MARGARET Y. WALL



B. RHETT CHAMBERLAIN



ALEXANDER SPRUNT JR.



E. BURNHAM CHAMBERLAIN

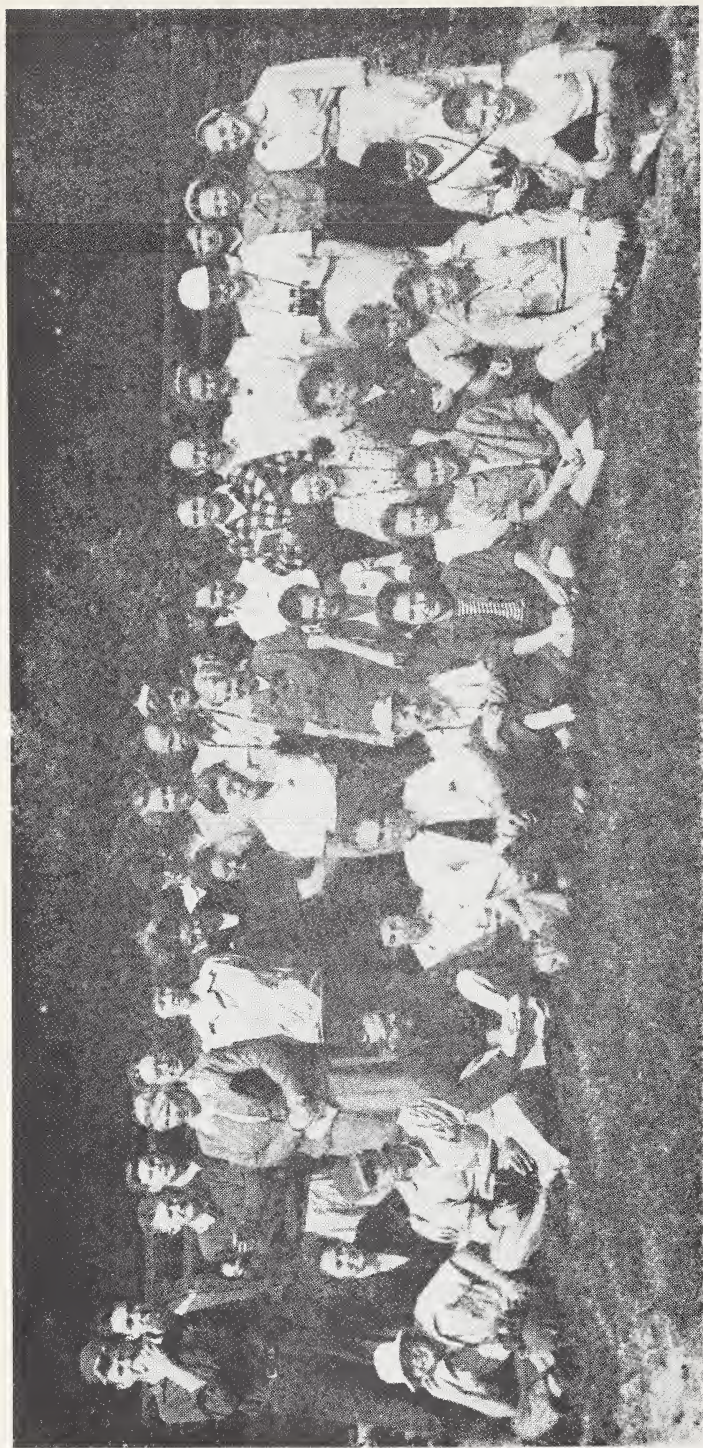
Many outstanding teachers of natural history benefited from attending the Maine Audubon Camp. Some of the other CBC scholarship winners were **Sarah Nooe** of Queens College at Charlotte, **Margaret Watson** of the N.C. School for the Blind (now the Governor Morehead School), Nancy Eliason, **Kitty Sandifer**, and **Gladys Baker** of Zebulon. Following her summer in Maine, Miss Baker passed on her enthusiasm for bird study to a young homemaker, the author of this article. Although Miss Baker retired from the classroom more than a decade ago, I can still spot many of her former students after just a brief conversation. She has left her mark on them, as well as on me.

Mecklenburg Audubon Club entertained the N.C. Bird Club at the Fall Meeting held at the Fresh Air Camp on the Catawba River in York County, S.C., 18 and 19 October 1947 (Chat 11:85-88). Everyone received a copy of Myrtle Warbler's "Field Guide to the People of North Carolina," and John H. Grey Jr., first editor of *The Chat* and then president of VSO, presented films and slides on shorebirds and the Pea Island area.

The membership list dated 1 November 1947 boasted three Life Members: Mrs. E.O. Clarkson, **Mrs. Moses Cone**, and Joe Jones. Mrs. Clarkson and Mr. Jones are both still active members, though he is now living in Virginia. Mrs. Cone died in 1947 (Chat 21:94).

In March 1948 the N.C. Bird Club met at Chapel Hill (Shaftesbury 1948). Dr. **Arthur A. Allen** of Cornell University presented a lecture, "North with the Birds to Hudson Bay," with splendid colored moving pictures of birds and other animals of the Canadian timberline and tundra. More than 125 members registered for the meeting, which also featured an extensive display of bird prints and etchings, including the Menaboni collection on loan from the National Audubon Society.

The most important item of business was the reading of a letter from Alexander Sprunt Jr., replying to an official inquiry from the N.C. Bird Club regarding the possibility of a coalition of the South Carolina nature groups with the North Carolina club. Sprunt's letter stated that the Charleston group had voted unanimously in favor of the merger, and



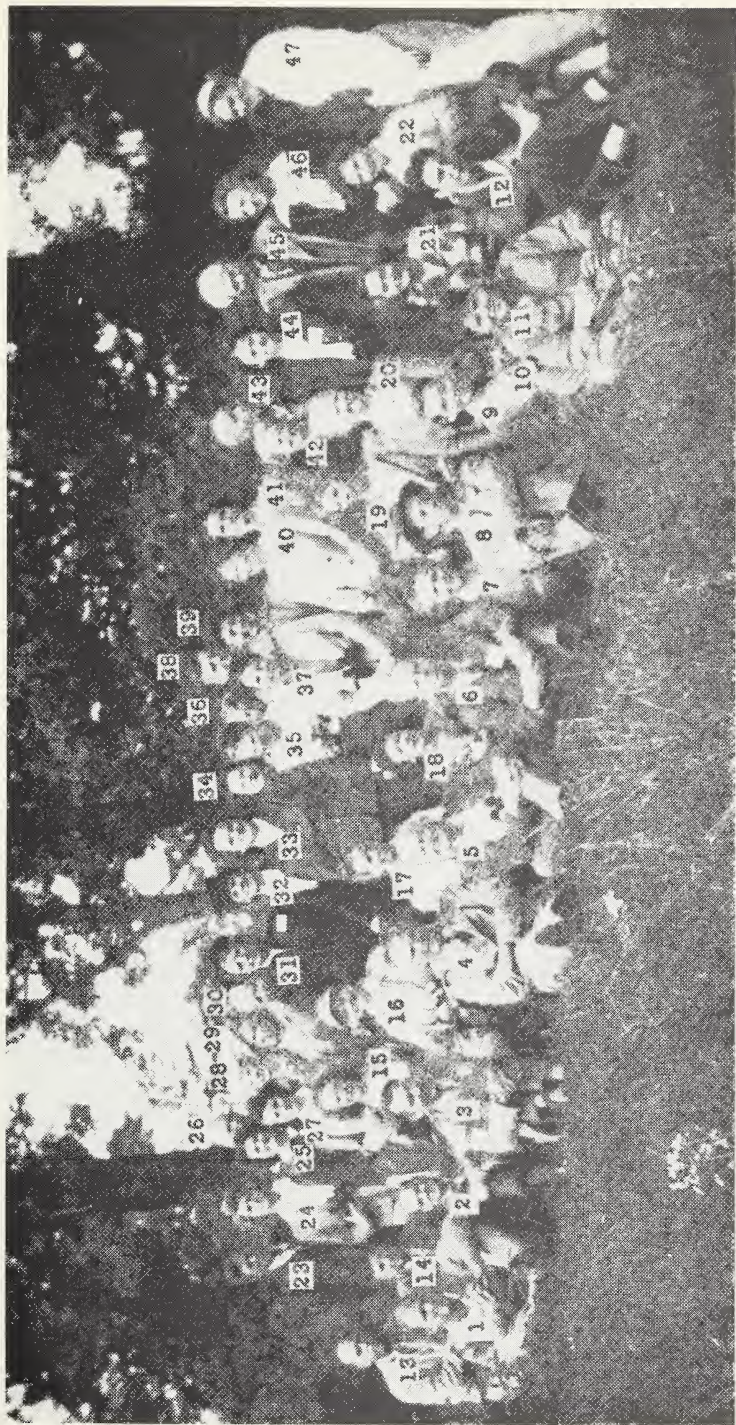
FALL MEETING, N. C. B. C., CHARLOTTE, OCTOBER 18-19, 1947

Front row, in the usual order: Norman Chamberlain, Charlotte; Miss Marietta Lindsey, Greensboro; B. R. Chamberlain, Charlotte; Dr. John H. Grey, Jr. Charlottesville, Va.; Mrs. Archie D. Shaftesbury, Greensboro; Dr. A. D. Shaftesbury, Greensboro; Mrs. Geo. Potter, Charlotte; Miss Elizabeth M. Osborne, Greensboro; Miss Evelyn Brown, Belmont; Miss Terry Nesslinger, Greensboro; Richard Jones, Goldsboro; Wm. M. Craven, Raleigh; Oscar H. Paris, Jr., Greensboro; John Trott, Jr., New London.

Back row: Jim Layton, Charlotte; Harry G. Bryant, Greensboro; Harry Davis, Raleigh; John Carr, Greensboro; Mrs. Char'otte Hilton Greer, Raleigh; Sarah Noe, Charlotte; Esther Bennett, Greensboro; Mrs. R. D. Douglas, Greensboro; Sandy McCullough, Raleigh; Sally Sandifer, Charlotte; E. B. Chamberlain, Charleston, S. C.; Bob Wolff, Goldsboro; Mrs. H. H. Brimley, Raleigh; J. Weston Clinard, Hickory; Mrs. B. R. Chamberlain, Charlotte; Miss Mary J. Huff, Belmont; Walter S. Adams, Asheville; Mrs. Margaret Y. Wall, Greensboro; Miss Camilla Louise Willis Wilson, R. H. Rembert, Asheville; Miss Bennie Brafford, Charlotte; Miss Bea Potter, Charlotte.

Middle row: Miss Virginia Pickelle, Raleigh; Miss Anne Locke, Charlotte; Mrs. E. B. Chamberlain, Charleston, S. C.; Mrs. W. B. Simons, Charlotte; Miss Kitty Constable, Charlotte; Dr. Charlotte Dawley, Greensboro.

Not shown in the photo are: Mr. and Mrs. G. H. Holmes, Tryon; Miss Sara Avant, Miss Kitty Sandifer, Chuck Erexson, Tom Killian, Brem Mayer, and Duke Sanches, who took the picture.



FALL MEETING, CAROLINA BIRD CLUB, TRYON, N. C., OCTOBER 2-3, 1948

2. J. W. Clinard, Hickory, N. C.; 3. Robert Overing, Raleigh, N. C.; 4. Archie Shaftesbury, Greensboro, N. C.; 5. Gabriel Cannon, Spartanburg, S. C.; 6. Thomas Parks, Hickory, N. C.; 7. Mrs. B. R. Chamberlain, Matthews, N. C.; 8. J. W. Warlick, Hickory, N. C.; 9. Burns Nesbitt, Spartanburg, S. C.; 10. LeGrand Rouse, Spartanburg, S. C.; 11. Norman Chamberlain, Matthews, N. C.; 12. Scott Bryson, Spartanburg, S. C.; 13. B. R. Chamberlain, Matthews, N. C.; 14. R. H. Rembert, Asheville, N. C.; 15. Mrs. M. F. Meredith, Asheville, N. C.; 16. Mrs. G. C. Potter, Charlotte, N. C.; 17. Miss Ruth Gilreath, Travelers Rest, S. C.; 18. Mrs. Clyde Sisson, Columbia, S. C.; 19. Miss Genevieve Moore, High Point, N. C.; 20. Miss May W. Puett, Greenville, S. C.; 21. Miss Helen Myers, Lenoir, N. C.; 22. Mrs. Archie D. Shaftesbury, Greensboro, N. C.; 23. Fred May, Lenoir, N. C.; 24. Mrs. Fred May, Lenoir, N. C.; 25. Mrs. Charlotte Hilton Green, Raleigh, N. C.; 27. Mrs. William Faver, Columbia, S. C.; 28. Miss Minnie Gwaltney, Hickory, N. C.; 29. Mrs. Rosa Lee Hart, Travelers Rest, S. C.; 31. Mrs. Cecil Appleberry, Wilmington, N. C.; 32. Mrs. C. B. Mattocks, High Point, N. C.; 33. Miss Gladys Hart, Travelers Rest, S. C.; 35. Mrs. M. Jennings, Greenville, S. C.; 36. Mrs. J. W. Clinard, Hickory, N. C.; 37. Mrs. J. H. Sanders, Gaffney, S. C.; 38. P. M. Chamberlain, Charleston, S. C.; 40. Mrs. Vallette J. Harriss, High Point, N. C.; 41. Miss Gladys Hart, Travelers Rest, S. C.; 42. Mrs. E. B. Chamberlain, Charleston, S. C.; 43. E. B. Chamberlain, Charleston, S. C.; 44. Mrs. R. T. Greer, Lenoir, N. C.; 45. Mrs. J. W. Warlick, Hickory, N. C.; 46. Miss Ethel McNairy, Greensboro, N. C.; 47. Mrs. Margaret Y. Wall, Greensboro, N. C.; 1. John H. Dick, Charleston, S. C.; 34. Mrs. Wade Montgomery, Charlotte, N. C.; 39. Mrs. Mary M. Guy, Raleigh, N. C.

the Columbia group had also signified an intent to participate. The N.C.B.C. approved the measure, and a committee was appointed to work out the details. Members were **B. Rhett Chamberlain** (chairman) of Charlotte, Dr. Richard L. Weaver of Chapel Hill, Dr. Archie D. Shaftesbury, and Harry T. Davis. Mr. Chamberlain was also elected president. A native of Charleston, S.C., and twin brother of E. Burnham Chamberlain of The Charleston Museum, Rhett was especially well qualified to guide the club during the first year of joint operation. The two-state organization was renamed Carolina Bird Club during an Executive Committee meeting held 15 May 1948 at Morrow Mountain State Park, Stanley County, N.C. (Chat 12:37-38).

The first Fall Meeting of Carolina Bird Club (Chat 12:73-75) was held at Tryon, N.C., on Saturday and Sunday, 2 and 3 October 1948. In January 1949 there was a field trip to Lake Mattamuskeet, and the eleventh annual meeting (first annual meeting since the merger with South Carolina) was held at Lumberton, N.C., Saturday and Sunday, 21 and 22 May 1949. The CBC charter of incorporation was adopted, bearing the signatures of B.R. Chamberlain, Mrs. Edwin O. Clarkson, **Robert H. Coleman**, Harry T. Davis, Mrs. Charlotte Hilton Green, **G. Hamilton Holmes**, **Robert Overing**, Archie D. Shaftesbury, Alexander Sprunt Jr., Mrs. Margaret Y. Wall, and Robert L. Wolff (Chat 13:55). The intrepid bird watchers reached the heron breeding colony at Lennon's Marsh in spite of the low water level that made it necessary to push and pull the boats a good part of the 3 miles to and from the site. A summer field trip to Bulls Island, S.C., was discussed. The club then had only two formal meetings a year, but extra field trips were scheduled from time to time, according to the interests of the members. Thus there sometimes was a spring field trip in addition to the spring business meeting as well as a fall or winter field trip in addition to the fall dinner meeting. Almost from the beginning, certainly as early as 1949, the field trips evolved into full-scale meetings with a program and at least a brief business session. However, the regular scheduling of three meetings per year was not formally adopted until the by-laws were revised in 1966 (Chat 30:59-63).

The May 1949 *Chat* (13:44-46) carried a warning about use of the new insecticides such as DDT, DDD, TEPP, and chlorinated camphene.

In 1949 a CBC member, Miss **Lunette Barber**, accepted a position with the N.C. Wildlife Resources Commission. Her duties included speaking on conservation topics in the schools and at meetings of civic organizations. Over the years various employees of this agency, especially the staff of *Wildlife in North Carolina*, were helpful to CBC. These include **Jack Dermid**, later of the faculty at UNC-Wilmington, whose photographs transformed *Chat* and added greatly to the beauty of *Birds of the Carolinas*; **William L. Hamnett**, who served as CBC treasurer from 1955 through 1965 and later became the third director of the N.C. State Museum of Natural History; and **Duane Raver**, now retired as editor of *Wildlife* and busier than ever painting fish and waterfowl.

Also in 1949, the University of South Carolina Press released *South Carolina Bird Life* by Alexander Sprunt Jr. and E. Burnham Chamberlain. This book is distinguished by the beautiful original paintings of **Francis Lee Jaques**, Roger Tory Peterson, **Edward von S. Dingle** (see Chat 33:7-10), and **John Henry Dick**. Mr. Dick returned from service in World War II to find the house at his mother's Dixie Plantation, near Meggett, S.C., destroyed by fire. Captivated by the beauty of the place, he built a modern home and studio on the site, overlooking the salt marsh. He also constructed ponds and enclosures for exotic birds. He is particularly proud of his breeding Demoiselle Cranes and has



William L. Hamnett was the third director of the N.C. State Museum of Natural History (1966-1974). He also served as CBC treasurer from 1955 through 1966.

invited CBC members to view his aviary on several occasions. Perhaps best known as the illustrator of *The Warblers of America* (Griscom and Sprunt 1957), he wrote and illustrated *Other Edens* (1979). Although Mr. Dick provided only one photograph for *Birds of the Carolinas*, it is sensational—a singing male Bachman's Warbler, the first publication of a color photograph of a living bird of this species.

Phillips Russell of Chapel Hill won the Mayflower Award for the best book by a North Carolinian published in 1949 with *The Woman Who Rang the Bell*, his biography of Cornelia P. Spencer (Chat 14:47).

Margaret Y. Wall of Greensboro was elected president of CBC at the Twelfth Annual Meeting (Chat 14:33-36) held at Charleston, S.C., 28 to 30 April 1950. The fall meeting was at Greenville, S.C., 14 and 15 October 1950. The following year the Executive Committee appointed Thomas L. Quay, of the Department of Zoology at N.C. State College, as the new editor of *The Chat*, and the publication office was moved from Greensboro to the N.C. State Museum. Dr. Quay, who had served as associate editor with John Grey from 1940 to 1942, completely revised the format of the journal and established the General Field Notes department under the editorship of B. Rhett Chamberlain, who remained in that position for the rest of his life. Chamberlain had previously served as an associate editor under Shaftesbury. Holding true to Grey's vision of a journal both scientific and popular, Quay also initiated the Backyard Birding department, edited for nearly 17 years by **Annie Rivers Faver**—Toncie to her family and friends.

In March 1952 the bird club met in Raleigh, the site of its founding 15 years earlier. **Governor and Mrs. W. Kerr Scott** gave a tea for the members at the Mansion. Perhaps Gov. Scott had a special interest in CBC because as Commissioner of Agriculture he had

worked closely with the Brimleys and Harry T. Davis. Other activities included a papers session, a banquet, and an Audubon Screen Tour. Not many people showed up for the Sunday morning field trip because of the icy roads and cold temperatures. However, a few hardy souls managed the bird hike and returned in time to attend services at the First Presbyterian Church, where Dr. **James Sprunt**, brother of Alexander Sprunt Jr. and a knowledgeable ornithologist, preached on the topic "Behold, the Birds of the Air."

In 1952 CBC had 20 affiliated clubs: Chapel Hill Bird Club, Mecklenburg Audubon Club, Charleston Natural History Society, Columbia Bird Club, Piedmont Bird Club (Greensboro), Greenville (S.C.) Bird Club, Henderson Bird Club, Blue Ridge Bird Club (Hendersonville), Hickory Bird Club, Catesby Bird Club (High Point), Lenoir Audubon Club, Lumberton Bird Club, Raleigh Bird Club, Roanoke Rapids Bird Club, Southern Pines Bird Club, Tar Heel Bird Club (Hickory), Tryon Bird Club, Wilmington Natural Science Club, Wilson Woman's Club (Garden Department), and Winston-Salem Bird Club.

Kay Curtis Sisson of Columbia, S.C., became editor of *The Chat* in 1953 and served for 5 years. With slight modifications she followed the format devised by Quay, but she instituted, in Volume 22, one important step forward—the annual index.

A popular form of bird study during the early 1950s was using powerful binoculars and telescopes to view flocks of fall-migrant birds moving between the observer and the moon. A newspaper story on this activity written by **Bugs Barringer** (Raleigh *News and Observer*, 7 September 1952) featured **J.W.E. (Bill) Joyner**, **Conrad Purvis**, and Dr. **Bob Walker** of Rocky Mount. At that time nocturnal observations were being made at more than 200 points in the United States and Canada.

The 1950s saw the first major flights of Evening Grosbeaks into the Carolinas (Chamberlain 1960), a sharp increase in reports of wintering Northern (Baltimore) Orioles in the piedmont and coastal plain (Chat 14:51-52), and the arrival of the Cattle Egret in the two states. Before the end of the decade, Cattle Egrets were well established as breeding birds. Initial fears of harm to the native herons and egrets were eased when studies showed the new arrivals to be late breeders whose nestlings are sometimes fed to the offspring of the Black-crowned Night-Heron (Beckett 1965).

Following Mrs. Wall, the other CBC presidents during the 1950s were Robert Overing of Raleigh, N.C., 1952-1954; **May W. Puett** of Greenville, S.C., 1954-1956; **Fred H. May** of Lenoir, N.C., 1956-1957; Charlotte Hilton Green of Raleigh, N.C., 1957-1958; Edna Lanier Appleberry of Wilmington, N.C., 1958-1959; and **Gilbert J. Bristow** of Columbia, S.C., 1959-1962. Fred May edited the CBC Newsletter while Miss Puett was president, and Dr. and Mrs. **Thomas W. Simpson** of Winston-Salem did so during May's term as president. Mr. and Mrs. Robert Overing of Chapin, S.C., formerly of Raleigh, were the NL editors for Mrs. Green, and Mrs. Appleberry appointed Harry Davis to the post.

At the annual meeting in High Point, N.C., on 20 March 1954, Carolina Bird Club elected its first Honorary Member for Life, **Waldo Lee McAtee** (Quay 1962a). Following long and distinguished service as principal biologist of the U.S. Bureau of Biological Survey and the U.S. Fish and Wildlife Service, he retired in 1950 and lived in Chapel Hill until his death in 1962. During this time he wrote 11 papers for *The Chat*, including a three-part list of the common names used for Carolina birds. B. Rhett Chamberlain became the club's second Honorary Member for Life in 1962 (Quay 1962b).



MAY W. PUETT



FRED H. MAY



WALDO LEE McATEE



CHARLOTTE H. GREEN

The Endowment Fund was established in 1954, during Miss Puett's term of office, and Lenoir Audubon Club made the first contribution. **Ellison A. Williams** of Charleston, S.C., was the first chairman. During his year as CBC president, Fred May stressed the need for adequate financial support of the club and a greater service in the field of conservation. He saw the Endowment Fund as a means of accomplishing both goals, and one of the early major contributions to the fund was in memory of Fred and Mary May's son Bill. A timber appraiser and newspaperman by trade, Fred May was a naturalist and historian by avocation. At the time of Fred's death on 22 April 1977 (Chat 41:77), the Endowment Fund had grown substantially. Today the total is nearly \$30,000.

The year 1959 saw another change in the editorship of *The Chat*. **Charles H. Blake**, recently retired from the Massachusetts Institute of Technology, became editor at that time. A prolific writer and experienced editor (*Bird-Banding*), Dr. Blake spent his retirement years banding birds at the farmstead he and his wife Helen restored outside Hillsborough, N.C. Both were deeply involved in local history and historic preservation. Born in 1901, Dr. Blake died in 1981 (Austin 1985), shortly after attending the 1980 Winter Meeting at Atlantic Beach, N.C., where many young ornithologists had an opportunity to talk with him during an informal question-and-answer program.

In 1959 a revised edition of *Birds of North Carolina* came off the press. The revisions, based mostly on articles that had appeared in *The Chat* since 1942, were compiled by **David L. Wray**, an entomologist with the N.C. Department of Agriculture, with the assistance of Harry T. Davis. Dr. Wray later compiled a new state checklist, following the nomenclature of the 1957 edition of the American Ornithologists' Union *Check-list of North American Birds*. Now retired, Dr. Wray still maintains an office in the department.

On 23 July 1961 the citizens of Gaston County dedicated a modern museum building to house the collections of **Mr. and Mrs. R.M. Schiele** (Schiele 1963). The museum, now enlarged and renamed in their honor, is a credit to their foresight and generosity.

David W. Johnston of Wake Forest University, Winston-Salem, N.C., became editor of *The Chat* in 1961. Harry T. Davis, then director of the N.C. State Museum, was elected CBC president in 1962 during a 25th anniversary meeting held in Raleigh. Mr. Davis had been a guiding hand in the affairs of CBC from the beginning and for many years maintained the club's mailing list. From 1958 to 1965 he also edited the newsletter, which at that time was a mimeographed sheet announcing the next meeting. Thanks to his devoted service, club dues remained \$1 until the fall of 1965, when the increased cost of printing and mailing publications finally required a raise to \$2 per year for a regular membership. In 1966, the year he retired as director of the N.C. State Museum, Mr. Davis was named an Honorary Member for Life. He died at Sea Level, N.C., in 1978.

Birds of the AEC Savannah River Plant Area by **Robert A. Norris** was published in 1963 as Contributions from The Charleston Museum XIV. *Notes on the Birds of Great Smoky Mountains National Park* by Arthur Stupka also came out in 1963, an event that stimulated interest in the bird life of the southern Appalachians. The March 1964 *Chat* announced the release of *Carolina Low Country Impressions* by the author-artist team of Alexander Sprunt Jr. and John Henry Dick.

Following Dr. Johnston's resignation in the summer of 1963, Mr. Davis had to find a new editor for *The Chat*. Much to the consternation of some club members, he selected a Zebulon housewife, a mother of four children who had been a bird watcher for only 5

years. Before the Executive Committee could meet and appoint someone better qualified, **Eloise Potter** had managed to turn out a couple of respectable issues. The club has been putting up with her ever since. In self-defense she has performed a valuable service for ornithology by compiling two cumulative indexes to *The Chat*, Volumes 1-25 in 1964 and Volumes 26-40 in 1978. Adequate indexing encourages ornithologists outside the Carolinas to search *Chat* and cite its authors in books and other journals. Significant articles in *The Chat* are listed regularly in *Biological Abstracts* and in the Recent Literature supplement that is mailed with *The Auk* (journal of the American Ornithologists' Union) and *The Ibis* (journal of the British Ornithologists' Union).

Rachel Carson died of cancer on 14 April 1964 (Chat 28:37). The same issue that announced the passing of the gifted and courageous author of *Silent Spring* carried a report of Roger Tory Peterson's testimony in Washington, D.C., that Bald Eagles, Ospreys, and other fish-eating birds are threatened by insecticide poisoning. Later CBC member **Theodore A. (Ted) Beckett III** (1966) documented the decline of the breeding gulls, terns, and Brown Pelicans he banded on Deveaux Bank, a large sand bar in the mouth of the North Edisto River off Seabrook Island, S.C. If the indiscriminate use of pesticides continues, he concluded, "Deveaux may well stand as a silent monument to the effects of chlorinated hydrocarbons upon our environment." Beckett fought successfully against aerial spraying for mosquito control in the Charleston area and alerted the U.S. Fish and Wildlife Service to the rapid decline of the Brown Pelican, which at that time was, like the Osprey, unprotected by law. The recent range expansion of nesting Brown Pelicans in the Carolinas is a welcome result of Beckett's timely warning and forceful campaign for prompt corrective action. Deveaux Bank is now an Audubon Sanctuary dedicated to the memory of Alex Sprunt, who died 3 January 1973 (Buchheister 1976).

Mrs. M.D. Gardner of Camp Lejeune, N.C., suggested that CBC adopt an emblem for a shoulder patch. She proposed a design featuring a Yellow-breasted Chat against a green outline map of the Carolinas (Chat 28:2). Adopted in 1964, the design is still used for the club's shoulder patches and decals.

Norme D Frost of Tryon, N.C., was president from 1964 to 1966, and CBC reached a peak of 1272 paid members in 1965. In making this announcement, Frost envisioned a membership of 1500 within a year, a goal never reached. Nonetheless, CBC members were busy on many different projects during Col. Frost's years in office. The by-laws were completely revised, and new committees were appointed. There was a major effort to increase the Endowment Fund. Members became actively involved in conservation issues such as the unsuccessful attempt to prevent private development of Smith Island, popularly called Baldhead, at the mouth of the Cape Fear River. However, public concern did result in careful protection of nearby Battery Island, with its famous heronry, and the state-owned portions of Smith Island, notably the salt marshes.

In 1964 Frost appointed the first Records Committee since the days of C.S. Brimley. Although the revised by-laws of 1951 (Chat 15:18-22) did not provide for a Records Committee, the Editorial Board of *The Chat* more or less functioned in that capacity from 1951 to 1964. A major responsibility of the CBC Records Committee is to advise the editors of *The Chat* on the acceptability of questionable bird sightings, but the long-term goal is to maintain and publish state bird lists. The North Carolina Records Committee also functioned as the nucleus of the bird committee at the Symposium on Endangered and Threatened Biota held at Raleigh, N.C., 7 and 8 November 1975. An outgrowth of

this meeting was the *Checklist of North Carolina Birds* (Parnell et al. 1978), which was published in cooperation with the N.C. State Museum of Natural History. This booklet is dedicated in memory of Edna Lanier Appleberry (1894-1978), who at a meeting shortly before her death counseled the members not to let the fun go out of bird study.

At the Midwinter Meeting in 1965, CBC members previewed *Wildlife Babies*, a 16-mm motion picture prepared for the N.C. Wildlife Commission by Jack Dermid. Some viewers declared it to be every bit as good as Walt Disney's nature films.

The Laboratory of Ornithology at Cornell University initiated its Nest Record Card Program in 1965, and **James F. Parnell**, a young professor of biology at Wilmington College (now UNC-Wilmington) acted as the Regional Center for the Carolinas. The need for studying the status of breeding birds was underscored by the explosive range expansions of swallows in the Southeast. Previously established as local nesters in the mountains and along the coast of the Carolinas, breeding Barn Swallows invaded the central counties during the late 1950s and early 1960s (Wintyen 1959, Parnell et al. 1963). In the spring of 1965, **Adair M. Tedards** (1965) discovered Cliff Swallow nests at Hartwell Dam on the South Carolina-Georgia line, and nests of the species were soon found at major reservoirs in central North Carolina (Stanly County, Chat 31:72) and on the North Carolina-Virginia line (Grant and Quay 1977). Cliff Swallows now nest at least sparingly from the mountains (McConnell 1981) to the coast (Shuler 1978). During this same period, Northern Rough-winged Swallows, long established in the mountains and piedmont, spread into the coastal plain (Platania and Clark 1981). Breeding Tree Swallows invaded the North Carolina mountains as early as 1979 (LeGrand and Potter 1980, Duyck 1981) and now nest as far south as northeastern Georgia (Lake Chatuge). Nesting in South Carolina and other parts of North Carolina seems sure to follow.

CBC members also documented the range expansion of the House Finch, which was introduced on Long Island, N.Y., in 1940. The first Carolina specimen was collected in Wake County, N.C., on 26 February 1963 (Potter 1964), and the species reached South Carolina in the winter of 1966-1967. One bird was seen at a feeding station in Greenville in December 1966 (Grimm and Shuler 1967), and another was banded at Hartsville in March 1967 (Morrison 1967). By the mid-1970s the House Finch was nesting widely in the Carolinas and showing signs of becoming as numerous and widespread as the House Sparrow in urban habitats.

Gladys Buckner of North Augusta, S.C., originated the Conservation department in the June 1965 *Chat*. **Marie Mellinger**, who was then living at Hardeeville, S.C., where her husband was manager of the nearby Savannah National Wildlife Refuge, took over the column in 1967, and she continued editing it until June 1974, well after she and Mel had retired to Tiger, Georgia. Marie also served as president of the Georgia Ornithological Society (1967-1969) and arranged one of the several joint meetings CBC and GOS have enjoyed.

The year 1966 brought many changes to CBC. Effective 1 January 1966, CBC acquired the Shuford Memorial Sanctuary near Tryon, N.C. **Helen Brown**, widow of **James Lee Shuford Jr.** and donor of the sanctuary, was named an Honorary Member for Life. CBC Headquarters moved to Tryon in 1966, and **Betty Paterson** became Headquarters Secretary shortly thereafter. Upon her resignation in 1981, she was named an Honorary Member for Life. Now Mrs. Julius Wilson, she still makes her home in Tryon.

Jay Shuler, then of Greenville, S.C., was elected president in 1966. One of his projects was publicizing the need for protecting habitat for carnivorous plants. Shuler's book *South Carolina Birds of the Foothills* came out in 1966, summarizing the recent field records of **Gaston Gage**, **Ruth Gilreath**, **William C. Grimm**, **Connor Tedards**, **Adair Tedards**, **E.S. Tillinghast**, **George Townes**, and **John Watkins** in addition to his own. Over the years Shuler has produced numerous slide sets and filmstrips for use by classroom teachers. Now a full-time employee of the National Park Service, Jay is stationed in the Badlands at Interior, S.D. His book on the friendship between John James Audubon and the Rev. John Bachman is scheduled for publication in the near future.

In cooperation with the U.S. Fish and Wildlife Service, the first Breeding Bird Survey routes were established in the Carolinas in 1966. Sometime in the month of June each participant is expected to follow a prescribed 25-mile route, stopping every half-mile to record all birds seen and heard in 3 minutes. **Jim Parnell** enlisted the first cooperators for North Carolina and **Ted Beckett** did so in South Carolina. These routes soon had bird students visiting parts of the Carolinas where no data had been recorded previously. Quite a few species were found to be breeding well outside the previously described ranges. The BBS sampling encouraged return visits and, at a few places, intensive studies.

Rhett Chamberlain died in May 1966, and he was succeeded, temporarily, as General Field Notes editor by Dr. Parnell, then regional editor for *Audubon Field Notes*. Dr. Quay, who was chairman of Parnell's graduate committee at N.C. State University, edited the field notes in 1967. Parnell resumed editorship of the field notes in 1968 and remained in that position through the Winter 1980 issue. During his tenure the volume of manuscripts became so large that the work load had to be shared. **Robert P. Teulings**, who succeeded Parnell as regional editor for AFN in 1970, took over the Briefs for the Files section of *The Chat* at the same time. In June 1972 **Julian R. Harrison III** of Charleston began editing the South Carolina contributions to the General Field Notes. Dr. Harrison, who teaches in the Department of Biology at The College of Charleston, has also served as a vice-president of CBC.

The March 1967 *Chat* is memorable because the cover illustration is a Dovekie drawn by **H. Douglas Pratt** of Charlotte, N.C. This was the very first pen-and-ink drawing he ever made as well as his first published drawing. If you want to see how much he has improved, study his plates in the National Geographic Society *Field Guide to the Birds of North America* (1983). Doug's current project is *A Field Guide to the Birds of Hawaii and the Tropical Pacific*, soon to be released by Princeton University Press.

In the September 1968 *Chat*, Pratt and his Davidson College friend **Marcus B. Simpson Jr.**, of Statesville, N.C., originated the Bird Watchers' Roundtable column, which ran for about 4 years before graduate school took the editors to other states. Mark, who also contributed many articles on the bird life of the southern Appalachian Mountains, recently returned to North Carolina and is now on the faculty of the School of Medicine at Duke University. Because Dr. Simpson no longer has time for field studies, he concentrates on the history of the natural sciences. Several of his papers, one jointly with Mrs. Simpson, have been published in the *North Carolina Historical Review*.

After Annie Rivers Faver retired from editing Backyard Birding in 1968, **Willie M. Morrison** of Hartsville, S.C., reorganized the column as Carolina Birds and Birders. This feature ran from September 1968 through March 1972, which was also the last issue for Bird Watchers' Roundtable. Seeing an urgent need for a popular column in *The Chat*,



Presiding at the registration desk for the CBC meeting at Blowing Rock, N.C., 27-29 September 1968 were, above left, Misses Anne Wilcox, Helen S. Myers, and George Wilcox, all of Lenoir. Above right, CBC President Bob Teulings (left) greets guest speaker Tom Smith. Below left: three CBC members from South Carolina, Mrs. Robert H. Coleman, Mrs. Donald Lacoss, and Mrs. Louis Miles. Below right: E.M. Manchester of Lenoir and Garvin Hughes of Hickory. (Photos by Willie M. Morrison)



Toncie Faver came out of retirement to edit CBC Roundtable. After just two issues, she died in May 1973. **Louis C. Fink**, formerly an active member of GOS and then recently retired to Rocky Mount, N.C., took over CBC Roundtable in the summer of 1973. He remains its editor today.

Robert P. Teulings was president of CBC from 1968 to 1970. He represented the club at organizational meetings of the North Carolina Conservation Council in 1968 and 1969. The idea of a council to unify the various clubs with an interest in natural history and conservation for effective political action had been suggested by Charles H. Blake as early as 1959 (Chat 23:70). Now the idea became a reality. **Arthur Cooper** of N.C. State University was the first president of NCCC. Among those serving on the first Executive Committee were James F. Parnell and **Robert F. Soots**.

A new edition of *South Carolina Bird Life* was issued in 1970 with a supplement by **E. Milby Burton**, director of The Charleston Museum; and Stackpole Books released *Home Guide to Trees, Shrubs, and Wild Flowers*, written and illustrated by William C. Grimm of Greenville, S.C. Grimm's book describes some 650 plants, grouping look-alikes in habitat situations.

In 1971 **John K. Terres**, former editor of *Audubon Magazine*, received the John Burroughs Medal for a book based on his field trips while he was a resident of Chapel Hill. The title is *From Laurel Hill to Siler's Bog: The Walking Adventures of a Naturalist* (Knopf, 1969).

Doris C. Hauser of Fayetteville, noted for her paper on sunbathing in birds (Hauser 1957), died on 30 March 1972 (Currie 1972). Her unfinished manuscript on anting was edited and published posthumously (Hauser 1973). Mrs. Hauser's observations, when combined with those of Eloise F. Potter (1970) indicated a strong correlation between anting and sunning activities and the onset of the postnuptial and postjuvinal molts (Potter and Hauser 1974). There was no apparent correlation of these grooming behaviors with peaks of ectoparasite infestations.

In 1973 Lippincott released *The World of the Wood Duck* by **F. Eugene Hester** and Jack Dermid. Two years later Dover republished Charlotte Hilton Green's *Birds of the South*, which was originally issued in 1933.

The First South Carolina Endangered Species Symposium was held at Charleston 11 and 12 November 1976. **Dennis M. Forsythe** and **Wm. Bruce Ezell Jr.** (1979) edited the Proceedings, which included ornithological papers by **John E. Cely**, **Michael R. Lennartz**, **Robert G. Hooper**, **Richard F. Harlow**, **Gene W. Wood**, **Paul B. Hamel**, **David F. Urbston**, **Donald N. Mudge**, and **Leroy E. Lewis**.

South Carolinians dominated the presidency of CBC during the early 1970s. **Evelyn Dabbs** of Sumter was elected in 1970, **F.M. (Pat) Probst** of Pawleys Island in 1971, **Ida Lee Winkler** of Raleigh, N.C., in 1973 and 1974, Col. Probst again in 1975, Mrs. Dabbs again in 1976, **Barbara Lee** of Raleigh in 1977 and 1978, and **W.H. (Bill) Wagner** of Chapel Hill in 1979. Mrs. Winkler and her husband, **Edwin W. Winkler**, have served CBC in numerous ways over the years. Ed was treasurer from 1953 to 1955 and the first chairman of the Sanctuary Committee appointed to oversee the property at Tryon. He also made and donated to the club the gavel that is passed from one president to the next.

Col. Probst did such an excellent job of editing the *CBC Newsletter* during his first term as president that he was asked to continue in this position and did so for 6 years. **Clyde Smith** of Raleigh became NL editor in 1978 and continues to serve the club in this capacity. By profession Smith is the Deputy Secretary of State for North Carolina.

During the early 1970s **Paul DuMont**, **Richard Rowlett**, and **Robert Ake** made some of the first regular trips off the North Carolina coast solely for the purpose of studying seabirds. Subsequent work by **David S. Lee**, **E. Wayne Irvin**, and others greatly increased our knowledge of offshore bird populations.

By the mid-1970s bird students were beginning to see signs of recovery from the excessive use of certain pesticides. A report based on BBS data from 1966 through 1974 indicated a population increase among small birds of deciduous forests, such as the Red-eyed Vireo and the Ovenbird. An article in *Science* (186:841-842) by David Johnston, former editor of *The Chat*, reported a significant decrease in DDT derivatives in body fat of dead migratory songbirds picked up at TV towers in Florida from 1964 through 1973.

In the late 1970s, construction of Beaverdam Reservoir, Falls Lake, and Jordan Lake in the Raleigh-Durham-Chapel Hill area stimulated interest in the inland occurrence of shorebirds and other "coastal" species.

The 1977 Spring Meeting was at Winston-Salem, and the highlight of the weekend was a talk by **Chandler S. Robbins** on the Breeding Bird Survey sponsored by the Office of Migratory Bird Management, USF&WS. During the evening Robbins recognized CBC members who had been long-time participants and signed up some new volunteers. Many people asked Dr. Robbins, a Life Member of CBC, to autograph their copies of his book, *Birds of North America*, a Golden Field Guide.

In April 1978 CBC met with Tennessee Ornithological Society and Georgia Ornithological Society at Fontana Village. The banquet speaker was Dr. **Charles Smith**, of the Cornell Laboratory of Ornithology, Ithaca, N.Y.

In 1979 **Harry E. LeGrand Jr.**, then a graduate student at Clemson University, succeeded Bob Teulings as regional editor for *American Birds* (formerly *Audubon Field Notes*) and also assumed responsibility for the Briefs for the Files in *The Chat*. LeGrand had been editor of the bird counts for the journal since 1974, a duty he turned over to **John O. Fussell III** of Morehead City, N.C.

The history of bird counts in the Carolinas predates December 1937, when the first Christmas Bird Count was held by members of the N.C. Bird Club (*Chat* 2[1]:7-9). The Christmas counts originated at the turn of the century when **Frank M. Chapman**, for 34 years curator of birds at the American Museum of Natural History, suggested censusing winter birds as a substitute for the traditional holiday hunts that encouraged "killing everything wild in fur and feathers" (Green 1972b). Dr. Chapman, who died in 1945, was also the author of America's first field book, *The Handbook of Birds of Eastern North America*, and the father of the Municipal Bird Sanctuary system (Green 1972b). In 1937 six North Carolina communities held Christmas Bird Counts: Niagra, Pine Bluff, and Southern Pines, all in Moore County; Washington, Beaufort County; Raleigh, Wake County; and Chapel Hill, Orange County. The enthusiastic participation by Moore County members can be attributed in part to the publication of *A Guide to the Winter Birds of the North Carolina Sandhills* (Skinner and Achorn 1928). There were 21 observers altogether. These included **Mary Keller Wintyen**, who 25 years later encouraged young **Jay Carter** to study birds (Wintyen 1963); J.H. Grey, F.H. Craighill, D.L. Wray, R. Collie, and C.S. Brimley at Raleigh; and at Chapel Hill, Coit M. Coker and **Eugene P. Odum**. The Chapel Hill group had 68 species for the day, topping Raleigh by 8. A charter member of N.C.B.C., Odum later collected the writings of H.H. Brimley

(Odum 1949) and became a pioneer ecologist. Now retired, he taught zoology at the University of Georgia at Athens and served as director of the Institute of Ecology.

Spring bird counts started in other parts of the country as informal May bird walks. In 1940 the N.C. Bird Club organized these outings like Christmas counts. Seven localities sent in reports (Chat 4:52-57). Until LeGrand offered his assistance, both bird counts were compiled by the editor or the General Field Notes editor of *Chat*. By the time Fussell took over this responsibility in 1979, the cost of publishing both counts in full had become prohibitively expensive, especially for the Christmas reports, which largely duplicated those in *American Birds*. Although the counts no longer appear in *Chat*, they remain popular because of the fellowship enjoyed in the field and at the report meetings. The highlights are published in Briefs for the Files, providing a permanent, indexed record of the outstanding sightings.

One of the country's most faithful participants in bird counts and breeding bird censuses was **Wendell P. Smith**, who retired to North Wilkesboro, N.C., in 1954, following 25 years of service as the State Ornithologist of Vermont (Hughes 1972). Smith immediately began making remarkable discoveries about the bird life of Wilkes County and became an active member of CBC, serving as treasurer from 1966 to 1968. He provided data for *Birds of the Carolinas* and continued reporting field observations until shortly before his death on 11 April 1980 at the age of 87.

In 1980 **Gail T. Whitehurst** of Raleigh revived Backyard Birding, which she continues to edit from her new home in Asheville, N.C. In that same year Jim Parnell resigned as editor of the North Carolina field notes. David S. Lee of the N.C. State Museum of Natural History filled this position through 1984. E. Wayne Irvin took over with the first issue of Volume 49. Harrison passed responsibility for the South Carolina field notes to **William Post**, of The Charleston Museum, in the fall of 1983.

Ramona Snavelly of Winston-Salem became CBC president in 1980, which was a great year for CBC authors and for nature books in general. Knopf published the *Audubon Encyclopedia of Birds* by John K. Terres. Harvard University Press released *The Age of Birds* by **Alan J. Feduccia** of UNC-CH, and Houghton Mifflin issued a revised edition of Peterson's Eastern bird guide. **John Sill**, of Franklin, N.C., illustrated *Welcome the Birds to Your Home*. The N.C. State Museum and the U.S. Fish and Wildlife Service issued the *Atlas of North American Freshwater Fishes*, for which Dave Lee was the principal author. CBC's Purple Martin expert, **Joshua A. Lee**, wrote *With Their Ears Pricked Forward: Tales of Mules I've Known*, which was published by John F. Blair of Winston-Salem. And in October *Birds of the Carolinas* was released by the University of North Carolina Press.

The idea of writing *Birds of the Carolinas* originated in 1969 when a representative of UNC Press approached CBC President Bob Teulings about doing a companion book to the very popular *Wild Flowers of North Carolina* by **William S. Justice** (brother-in-law to E. Milby Burton) and **C. Ritchie Bell**. Bob, Jim Parnell, and I, who had already been talking about doing a North Carolina bird book, agreed to write the two-state book. A manuscript was ready for review in the fall of 1974. Members and friends of CBC sent in hundreds of color slides. The reviewer liked the manuscript. Publication seemed imminent. But frustrating delays resulted from changes in administration at UNC Press and a prior commitment to publish *Amphibians and Reptiles of the Carolinas and Virginia* by **Bernard S. Martof**, **William M. Palmer**, **Joseph R. Bailey**, and **Julian R. Harrison III**. Jack Dermid was the photographer for this book, which was released in the spring of

1980. By the time *Birds of the Carolinas* finally came out in the fall of 1980, many important new records had been added to the 1974 manuscript. Everyone agreed that the book benefited from the delay.

During Mrs. Snavelly's second year as president, following Betty Paterson's resignation as HQ secretary, the Executive Committee decided to accept an invitation to return the club's headquarters to the N.C. State Museum of Natural History. **Fran Irvin** of Raleigh served as HQ secretary from the fall of 1981 until February 1985 when **Shari Buckley**, administrative assistant to the museum's director, accepted the position.

Keith L. Bildstein, of Winthrop College, was program chairman for a Conference-Workshop on Southeastern Coastal and Estuarine Birds held at Belle W. Baruch Field Laboratory near Georgetown, S.C., 11 to 13 September 1981.

A Symposium on the Seaside Sparrow was held at the N.C. State Museum 1 and 2 October 1981. It was sponsored jointly by the N.C. Biological Survey and the U.S. Fish and Wildlife Service, with the cooperation of the museum and Carolina Bird Club. Many of the preliminary arrangements were made by Thomas L. Quay, who had recently retired from the Zoology Department at NCSU. Among his many former students in attendance was the keynote speaker, F. Eugene Hester, now assistant director of the U.S. Fish and Wildlife Service, Washington, D.C. Dr. Hester is also an alumnus of Miss Baker's seventh grade at Wendell, N.C. Other symposium speakers included **John B. Funderburg Jr.**, director of the N.C. State Museum of Natural History, who did his doctoral research under Quay; **Oliver L. Austin**, former editor of *The Auk* and now editor of the *Bulletin of the Florida State Museum*; Arthur W. Cooper of NCSU, a past president of the N.C. Academy of Science and of the Ecological Society of America; **Herbert W. Kale II**, vice-president for ornithological research for the Florida Audubon Society; **James A. Kushlan**, now editor of *Florida Field Naturalist*; and Chandler S. Robbins of the U.S. Fish and Wildlife Service. John Henry Dick contributed a painting of the nine races of the Seaside Sparrow, which was published as the frontispiece of the proceedings (Quay et al. 1983). The book also has a recording of Seaside Sparrow vocalizations prepared by **J.W. Hardy** of the Florida State Museum.

An aspect of bird study and conservation that has aroused much interest among CBC members during the past decade is restoration of raptor populations. Two outgrowths of this interest are the Carolina Raptor Center at Charlotte, N.C., founded under the leadership of **Richard D. Brown**, and the various hacking programs for Ospreys, Bald Eagles, and Peregrine Falcons, some of which have been conducted at Shining Rock Wilderness Area, Grandfather Mountain, and Lake Mattamuskeet.

Dr. Brown became CBC president in 1982, **George W. Morgan** of Winston-Salem in 1984, and **John Watson** of Southern Pines in 1985 and 1986. Morgan was elected at a joint meeting of the Wilson Ornithological Society and Carolina Bird Club held on the UNC-Wilmington campus. At that time the name of the new editor of *The Wilson Bulletin* was announced—Keith L. Bildstein of Winthrop College, Rock Hill, S.C., a member of the CBC Executive Committee. Among those reading papers at the WOS-CBC meeting were **Bill Hilton Jr.**, of Northern High School at Rock Hill, and one of his students, **James H. Mathis**. Like "Roxie's boys" of many years ago, young Mathis and the other Northern High students attracted a great deal of attention and well-deserved praise.

Using study skins and color slides to illustrate the fine points of shorebird identification, **Claudia Wilds**, a CBC member from Washington, D.C., spoke on

"Dowitchers, Yellowlegs and Peep" at the Winter Meeting at Nags Head 21-23 January 1983. She also provided directions to the Lesser Black-backed Gull at Wanchese, thus enabling many club members to see the species for the first time. Ms. Wilds is the author of *Finding Birds in the National Capital Area*, a Smithsonian Nature Guide released in 1983. The book includes a brief section on the Outer Banks.

On 14 May 1983 seven CBC members tallied 186 bird species from the mountains to the Gulf Stream to earn more than \$1,800 in pledges for a summer scholarship program sponsored jointly by the bird club and the N.C. State Museum of Natural History. Winners were **Katharine Lundy** of N.C. State University, who studied geographical and ecological distribution of *Empidonax* flycatchers in North Carolina; **Elizabeth Hawfield**, a graduate student at Winthrop College, who studied fault bars in raptor feathers (Chat 50:15-18); and **Danny Smith** and **Paul Kumhyr**, who surveyed the breeding birds of Granville County, N.C. Kathy was assisted in the field by CBC member **Maxilla Evans**, of Waynesville.

In 1983, the 100th anniversary of its founding, the American Ornithologists' Union published the sixth edition of its *Check-list of North American Birds*. CBC members are still trying to get used to saying "Northern Cardinal" and "Northern Mockingbird."

When people congratulate me on the quality of *The Chat*, I remind them that one cannot edit a paper that has not been written. The journal reflects the ability and interests of the membership. I was fortunate to assume the editorship early in the 1960s, the decade when an extraordinary group of bird students reached high school and college age. Most had grown up in CBC and thus came under the influence of three outstanding young field ornithologists, James F. Parnell, Robert F. Soots, and **Paul W. Sykes Jr.**, all of whom did their graduate work at NCSU under Dr. Quay, who was the first graduate student of Z. P. Metcalf to receive a Ph.D. from N.C. State. Parnell did research on the habitat preferences of wood warblers during spring migration, received his Ph.D. in 1964, and accepted a position in the Biology Department of Wilmington College. Dr. Soots taught at Campbell University, Buies Creek, N.C., and cooperated with Parnell in studies of colonial waterbirds prior to becoming the principal wetlands ecologist of the U.S. Army Corps of Engineers. Sykes entered graduate school at NCSU in 1964 and studied the fall land-bird migration in the Bodie-Pea Island region of coastal North Carolina. Since 1967 Sykes has been a wildlife biologist in the Endangered Species Program of the U.S. Fish and Wildlife Service. Presently stationed at Athens, Georgia, as a member of a team studying Kirtland's Warbler migration, Sykes still looks forward to returning to the Bodie-Pea Island area each year to lead the Christmas Bird Count.

The very first *Chat* I edited—September 1963—carried a paper on Red-cockaded Woodpeckers by **Lee Jones** of Charlotte. In the acknowledgments he mentioned the assistance of CBC member **Joe Norwood** (Jones 1963). In the fall of 1963 Lee entered NCSU as a freshman and became one of the "Quay's boys." Jones did his graduate work in California, stayed there, served as editor for *Western Tanager*, and formed an environmental consulting firm. Others in this extraordinary group who are still active members of CBC and residents of the Carolinas include Mark Simpson, Will Post, Harry E. LeGrand Jr. (now with the N.C. Natural Heritage Program), John O. Fussell III (author of *Finding Birds in Carteret County*), J.H. (Jay) Carter III (who continues his Red-cockaded Woodpecker research while working on a Ph.D. at NCSU), **J. Merrill Lynch** (now employed by The Nature Conservancy), **Chris Marsh** (a CBC vice-president who teaches



biology at Coastal Carolina College, Conway, S.C.), **Micou Metcalf (Mike) Browne** (grandson of Z.P. Metcalf), and **Gilbert S. Grant**, who was one of "Roxie's boys" when he worked summers at the U.S. National Museum. Dr. Grant is now teaching at Coastal Plains Community College at Jacksonville, N.C.

Some members of the group are widely scattered. Doug Pratt did research in Hawaii and Micronesia, received a Ph.D. from Louisiana State University, and now makes his home in Baton Rouge. **James H. Hunt** did research in Central America, received his Ph.D., and now teaches in the Biology Department of the University of Missouri at St. Louis. **John Erickson** has strayed into the field of faculty development, and **Edmund LeGrand** is a veterinarian. **Dale Lewis** is one of 10 Fellows of the New York Zoological

Society and the Bronx Zoo. At present he is doing research on elephants and rhinoceroses in the Bush Country of Zambia. His wife is a wildlife artist for the Los Angeles Zoo.

Also attending NCSU during the "golden age" were **Fred L. Johns**, now of North Adams State College in Massachusetts; **Donald A. McCrimmon Jr.**, formerly of the Cornell Laboratory of Ornithology and now at the Point Reyes Bird Observatory in California; **John Wright**, who taught in Virginia prior to accepting a position at Greenville, N.C., in 1985; and **Stephen Fretwell**, whose *Populations in a Seasonal Environment* was published by Princeton University Press in 1972.

Young people have made outstanding contributions to bird study in the Carolinas both before and after the 1960s, but the enthusiasm and productivity of the bird students who "came of age" during that decade are truly remarkable. CBC may never again enjoy such a concentration of talent.

During the 1970s UNC-Wilmington, UNC-Chapel Hill, Duke University, the N.C. State Museum of Natural History, the University of South Carolina (through the Baruch Institute), and Clemson University joined NCSU in emphasizing ornithology. Although Clemson faculty members such as **Douglas E. Wade** and Gaston Gage were long associated with CBC, there had not been a large number of active bird students at the university before **Sidney A. Gauthreaux Jr.** arrived. Dr. Gauthreaux, Michael J. Lennartz, Paul B. Hamel, and Harry E. LeGrand Jr. have published a number of works on bird migration and habitat relationships. The four worked together on *Bird-Habitat Relationships on Southeastern Forest Land* (Hamel et al. 1982). Clemson faculty and students also have been responsible for long-term studies of the Red-cockaded Woodpecker. At Wilmington, Parnell and Soots (1974, 1979) produced the *Proceedings of a Conference on Management of Dredge Islands in North Carolina Estuaries* and the *Atlas of Colonial Waterbirds of North Carolina Estuaries*. They also helped the U.S. Army Corps of Engineers develop schedules for dumping dredged materials to prevent major disturbances at active nesting sites for colonial waterbirds.

David S. Lee came to the N.C. State Museum in 1975 and immediately set about conducting field studies of birds and mammals. He and his associates have published the results of research on seabirds, the vertebrate fauna of pocosins and Carolina bays, and bird-habitat relationships on Grandfather Mountain. In cooperation with CBC, a distributional survey of the breeding birds of North Carolina is in preparation. At UNC-CH **Helmut Mueller** and **Haven Wiley** have guided many excellent students to advanced degrees through research on bird behavior. These include **Lynn Moseley**, who now teaches biology at T. Gilbert Pearson's alma mater, Guilford College. Duke tends to stress physiological research, though **Peter Klopfer** is well known for behavioral studies. Since Quay's retirement, **Phil Doerr** and **Jeff Walters** have provided leadership for ornithological research at N.C. State University, where projects emphasize raptors, waterfowl, woodcock, and quail as well as ecological and behavioral studies of the Red-cockaded Woodpecker.

Many active researchers are not directly associated with any educational or governmental institution. **Paul A. Stewart**, whose doctoral research was on the Wood Duck, came to North Carolina to work at the Agricultural Research Station at Oxford and has remained here since his retirement. Dr. Stewart is well known for studies of blackbirds and vultures. His major paper on the American Black Vulture (Stewart 1983) appeared in *Vulture News*, a journal published in South Africa. Who would have thought, when Black

Vultures walked the streets of Charleston, that anyone would ever spend years studying "South Carolina Buzzards"?

The world of bird study and wildlife conservation has changed drastically in the half century since CBC was founded in 1937. Thanks to the Migratory Bird Treaty Act and public opinion shaped by T. Gilbert Pearson, Audubon societies, state bird clubs, women's clubs, garden clubs, and countless school teachers, protection of birds and their nests is almost taken for granted in North America today. Most of our avian species have made a good recovery from the excessive use of persistent pesticides, though pesticide use remains a problem in the underdeveloped countries. Now our immediate concerns are industrial pollutants (e.g. heavy metals), acid rain, the greenhouse effect, and the loss of habitat diversity.

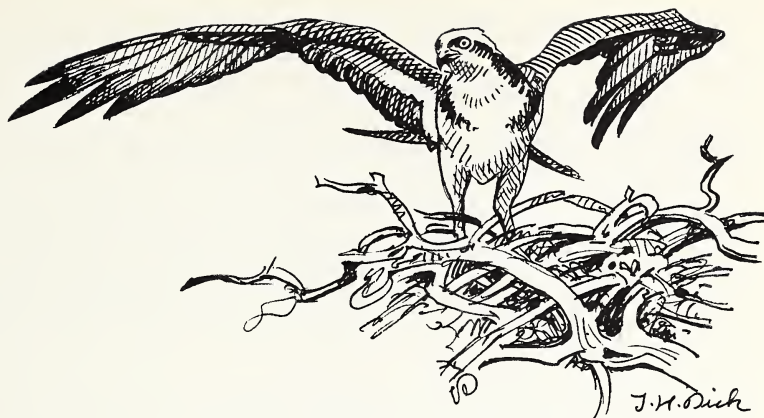
In the Carolinas we are fortunate that many developers and big businesses are sensitive to environmental concerns. In South Carolina developers of Hilton Head Island established the Sea Pines Forest Preserve and arranged protection for the heronries (Chat 36:5). Pinckney Island gained protection through The Natural Land Trust Inc. and the Federal Bureau of Sports Fisheries and Wildlife. National Audubon Society manages Four Holes Swamp. Union Camp Corporation donated Turtle Island (1,700 acres) to the State of South Carolina as part of its Heritage Trust program (Chamberlain 1978).

Union Camp has also made generous donations of land to the State of North Carolina, including the Green Swamp Natural Area in Brunswick County, the Camassia Slopes Tract on the Roanoke River (Chat 46:41), and 3,800 acres along Chowan Swamp for use as an environmental studies center (Chat 46:42). Prulean Farms donated the Alligator River National Wildlife Preserve in Dare County, and The Nature Conservancy now manages the Nags Head Woods Ecological Preserve at Kitty Hawk.

Although Carolina Bird Club is not staffed or funded in a way that permits active lobbying on environmental issues or direct management of large wildlife preserves, the club does have an informed membership that can work at the local, state, and national levels to support worthwhile causes and oppose potentially harmful developments. CBC members can back up their environmental concerns with 49 indexed volumes of *The Chat*, representing the field work of thousands of observers, amateurs and professionals alike. This is an impressive body of ornithological literature that has been cited many times in scientific books and papers, environmental impact statements, and government reports and technical bulletins. Carolina Bird Club is, more than anything else, a means of communication between amateur and professional ornithologists, between bird students and specialists in other disciplines, and between field workers of the past, present, and future.

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North Carolina State Museum of Natural Sciences, P.O. Box 27647, Raleigh, N.C. 27611.

The 102 Charter Members of the North Carolina Bird Club

Compiled by ELOISE F. POTTER

Seventy-five people met in Raleigh, N.C., on 6 March 1937, to form the North Carolina Bird Club, an undertaking sponsored by the newly organized Raleigh Bird Club. By the May deadline, NCBC had 101 paid charter members and one honorary charter member, T. Gilbert Pearson. These 102 people are listed below along with their 1937 addresses and brief biographical sketches if such information is available. Names in bold type are persons known to be living in December 1985. The editor of *The Chat* will welcome further details on the lives of the founding members and early bird club leaders.

Allen, Catherine, Professor, Meredith College, Raleigh

Miss Ida Catherine Allen was a native of Ohio. She taught German at Meredith College and headed the Modern Language Department prior to her retirement in 1940. She died 7 April 1953 in Asheville.

Allen, Murray, Esq., 609 Security National Bank Building, Raleigh
Lawyer.

Allison, J.C., 117 Hillcrest Road, Raleigh

Anderson, Miss Grace C., 528 Walnut Street, Statesville

President of NCBC in 1942; taught English and expression at Mitchell College; died 6 October 1950 (*Chat* 14:71).

Benbow, C.D., Box 128, Tarboro

Biggs, Joseph D., 220 Chamberlain Street, Raleigh

Student at N.C. State College (now NCSU); later director, Washington Field Museum, Bug House Laboratory, Washington, N.C.

Bostian, Dr. Carey H., 2208 Hope Street, Raleigh

Geneticist; professor and chancellor at N.C. State College; NCBC secretary-treasurer and treasurer; retired and living at Chapel Hill.

Bragaw, H. Churchill, Washington

Associated with Washington Field Museum; manager of Orton Plantation; killed in action in World War II (Chat 8:28).

Brannon, C.H., N.C. Department of Agriculture, Raleigh

Died in Virginia.

Brimley, Clement Samuel, N.C. Department of Agriculture, Raleigh

State entomologist, an author of *Birds of North Carolina*, first president of NCBC; born in England 18 December 1863, died 23 July 1946 (Chat 10:61-64).

Brimley, Herbert Hutchinson, N.C. State Museum, Raleigh

First director of N.C. State Museum, an author of *Birds of North Carolina*, president of NCBC 1942-1944; born in England 7 March 1861, died 4 April 1946 (Chat 10:41-45).

Brimley, Ralph, Central High School, Winston-Salem

Son of C.S. Brimley and former treasurer of NCBC.

Brown, Mrs. E.M., Washington

Living at Beaufort County Nursing Home, Washington, N.C.; age 95.

Browne, Miss Cicely, 408 Dixie Trail, Raleigh

Daughter of William Hand Brown Jr.; worked for Bishop Penick; donated the Hymettus Woods nature park to City of Raleigh; lives in home adjacent to the park.

Browne, Dr. Wm. Hand, Jr., State College Station, Raleigh

Taught engineering at N.C. State College; deceased.

Bunn, Mrs. Turner B., 509 Falls Road, Rocky Mount

Busbee, Miss Louise, 1818 Park Drive, Raleigh

Louise Taylor Busbee, known as Miss Lulie, operated St. Mary's Kindergarten near the First Presbyterian Church in downtown Raleigh.

Carson, C.M., 324 S. Tryon Street, Charlotte

Cheek, Mrs. Charles C., Sanford

Clark, Mrs. S.N., Tarboro

Coker, Coit M., Box 950, Chapel Hill

Craighill, The Rev. Francis H., 225 N. Church Street, Rocky Mount

D.D., Episcopal clergyman, pastor of Church of the Good Shepherd, Rocky Mount; born 1875, Suffolk, Virginia, died 14 October 1941 (Chat 5:49). His wife, Mary Reese Craighill, died 24 June 1946 (Chat 10:75).

Craven, H.E., 1710 Park Drive, Raleigh

Henry Eddins Craven was born in Concord, N.C.; attended Wake Forest College; and served as superintendent of schools at Franklinton prior to moving to Raleigh, where he became a vice president of King Drug Co. He was an egg collector who traded specimens with T. Gilbert Pearson and often went afield with C.S. Brimley. As the bird merit badge examiner in Raleigh, Craven had a standing offer of \$5 to any Boy Scout who could show him an Ovenbird nest. Mr. Craven died in 1938.

Craven, William, 1710 Park Drive, Raleigh

The son of H.E. Craven, Bill served in World War II and was a Boy Scout executive in Goldsboro, N.C., and Daytona Beach, Florida. Returning to North Carolina, he operated a Western Auto Store at Warsaw for 4 years prior to joining King Drug Co. Prior to his retirement, Craven headed the photographic division of the

company. As a young man, he helped Harry Davis and others with the excavation of Town Creek Indian Mound, and he took motion pictures at some of the early NCBC meetings.

Daniel, Mrs. O.J., 2021 Fairview Road, Raleigh

Davis, Mrs. Andrew J., Henderson (Chat 1[5-6]:7)

With Claudia Watkins Hunter a co-founder of Henderson Bird Club.

Davis, Ferd, Zebulon

Ferd Leary Davis, Zebulon attorney; son of the Rev. and Mrs. Theo. B. Davis; graduate of Wake Forest College and Wake Forest Law School; major general and former Adjutant General of North Carolina; uncle of CBC member Richard J. (Ricky) Davis.

Davis, Harry Towles, N.C. State Museum, Raleigh

Director of the N.C. State Museum, 1937-1966; president of CBC 1962-1964; born 1897, died 6 September 1978.

Davis, Mrs. Harry T., Raleigh

Davis, Mrs. M.A., Washington

Dollar, Mrs. M., 201 Park Avenue, Raleigh

Wife of Dr. Dollar, a chiropractor.

Dye, Mrs. L.M., 701 N. Blount Street, Raleigh

Eaton, Miss Louise, Oxford Orphanage, Oxford

Eliason, Mrs. Minnie H., Mitchell College, Statesville

Taught biology; deceased.

Eliason, Miss Nancy, Peace Junior College, Raleigh

Taught biology; deceased.

Farmer, J.S., Tenacres, R.F.D. 1, Raleigh

Finster, Miss Ethel B., Box 5015 Biltmore Station, Asheville

Fox, Wade, Jr., West Court Street, Greensboro

Dr. Fox was later associated with the Department of Zoology, University of Southern California, Los Angeles (Chat 15:35).

Francke, Mrs. L.J., Glen Head, N.Y.

Garren, G.M., 15 W. Lenoir Street, Raleigh

A retired person who usually went on the early-morning bird walks sponsored by Raleigh Bird Club; deceased.

Gee, N. Gist, Greenwood, S.C.

Goodwin, Mrs. Miles, 120 Hillcrest Road, Raleigh

Wife of Dr. Goodwin, a well-known Raleigh physician.

Green, R.W., 2818 White Oak Road, Raleigh

Economics professor at N.C. State College; died 15 June 1946 (Chat 10:75).

Green, Mrs. Charlotte Hilton, 2818 White Oak Road, Raleigh

Nature columnist for *Raleigh News and Observer* for 42 years; first president of Raleigh Bird Club; president of CBC, 1957-1958; wife of R.W. Green; living in a retirement home at Tarboro, N.C. (see *Wildlife in North Carolina*, October 1983, pages 15-17).

Gregory, The Rev. C.E., First Presbyterian Church, Morganton

Carey Ellis Gregory, 1874-1943 (Chat 7:48).

- Grey, The Rev. John H., Jr., 1719 Park Drive, Raleigh
D.D., pastor of West Raleigh Presbyterian Church; first editor of *The Chat*; born 1902, died 1971.
- Guion, George Seth, 1701 American Bank Building, New Orleans, La.
Lawyer and collector of ornithological journals; died 1943 (Chat 8:16).
- Habel, Miss Margaret, 327 E. Jones Street, Raleigh
Active in Raleigh Bird Club; deceased.
- Hall, Earl H., Woman's College of the University of North Carolina, Greensboro
Now deceased, Dr. Hall was a professor of biology.
- Hamnett, Mrs. W.E., Edneyville
- Harrison, Dr. T.P., 1800 Park Drive, Raleigh
Professor of English at N.C. State College and head of the department; ran 5 miles each day in the woods where Cameron Village was built; deceased.
- Haynes, Milford W., Box 731, Tarboro
- Hearne, Miss Clara, Roanoke Rapids
Elementary supervisor, Roanoke Rapids Schools; president of NCBC, 1944-1946.
- Heidelberg, Bert, Jr., N.C. State Box 3133, Raleigh
Student at N.C. State College; deceased.
- Higham, Mrs. John V., Carroll Drive, Raleigh
May Davis Higham died 1 April 1945 (Chat 9:42).
- Holmes, Mrs. G.H., Tryon
Marie Allen Walker Holmes (1875-1950) and her husband George Hamilton Holmes (1872-1950) died from injuries sustained in an automobile accident in April 1950. Mr. Holmes was a president of Tryon Bird Club and a signer of the CBC charter (Chat 14:46).
- Holmes, J.S., N.C. Dept. Conservation and Development, Raleigh
State Forester.
- Holmes, Mrs. J.S., 302 Forest Road, Raleigh
- Hoshour, Mrs. Samuel, Mansion Park Hotel, Raleigh
Crippled and confined to a wheelchair, she was brought to state and local bird club meetings by her husband, who was a successful salesman; deceased.
- Hunter, Claudia Watkins, Henderson
A co-founder of Henderson Bird Club and its first treasurer; president of NCBC 1939-1941; died 1974.
- Hutchings, Miss Lida, Pine Bluff
- Jones, Joe**, The Chapel Hill Weekly, Chapel Hill
Retired newspaperman, Life Member of CBC, living at Berryville, Virginia. His wife, Betty Smith, wrote the 1943 best-seller *A Tree Grows in Brooklyn*.
- Kelly, Virgil, 212 Maple Avenue, Fayetteville
A collector of birds' eggs who added significantly to the ornithological records of the state (Chat 14:36-37).
- Knox, Bertha, Salisbury
- Kugler, Mrs. Frank C., Washington
- Little, Mrs. J.C., 1210 Hillsboro Street, Raleigh
Husband was an attorney.
- MacNeille, Miss Marion C., Pine Bluff

Mangum, Miss Eva, R.F.D. 1, Morganton

Martin, Miss Flossie, R.J. Reynolds High School, Winston-Salem

Taught biology; living at Mocksville, N.C.

McAllister, Lacy L., Pilot Insurance Company, Greensboro

Secretary-treasurer of NCBC; scoutmaster

Memory, Mrs. Jasper L., 405 Washington Street, Whiteville

Metcalf, Dr. Z.P., N.C. State College, Raleigh

Zeno Payne Metcalf (1885-1956) was head of the Department of Zoology and Entomology at N.C. State College, a teacher of ornithology, and the founder of the wildlife curriculum there in 1937. His grandson, Micou Metcalf Browne, is a CBC member and contributor to *The Chat*. Dr. Metcalf's daughter, Mrs. Micou F. Browne of Raleigh, recalls that her father was always getting up early in the morning to lead a group on a field trip.

Mozo, Ralph H., 406 E. Ninth Street, Greenville

Mozo, Mrs. Ralph H., 406 E. Ninth Street, Greenville

Murray, The Rev. Joseph James, 6 White Street, Lexington, Virginia

D.D., first editor of *The Raven* (1930-1969); born 1890, died 1973.

Nooe, Miss Katherine V., Statesville

Public school teacher; deceased. Her sister, Miss Sarah Nooe, is a Life Member of CBC.

Oberholser, Dr. Harry C., Washington, D.C.

Served with U.S. Biological Survey (now U.S. Fish and Wildlife Service) for nearly 50 years; born 1870, died 1963 at Cleveland, Ohio.

Odum, Eugene P., Cleveland, Ohio

Ph.D., lived at Chapel Hill; brother to H. Thomas Odum; compiled writings of H.H. Brimley; pioneer ecologist, Alumni Foundation Distinguished Professor of Zoology and director of the Institute of Ecology at the University of Georgia at Athens, retired.

Payne, Mrs. Louis W., 1920 Sunset Drive, Raleigh

Hennie Payne, first wife of L.W. Payne of the N.C. Highway Department; deceased.

Pearson, Dr. T. Gilbert, 1775 Broadway, Room 841, New York City

President of the National Association of Audubon Societies (1920-1934), founder and president of the International Committee for Bird Protection (1922-1938), editor of *Birds of America* (1917), principal author of *Birds of North Carolina*, honorary charter member of NCBC; see *Chat* 50:29-41.

Pritchett, Mrs. H.D., Box 1622, Charlotte

Rankin, Henry A., Jr., Fayetteville

Life Member of CBC; still residing in Fayetteville.

Rivers, Miss Dorothy, 530 N. Person Street, Raleigh

Ross, Miss Blanche, Morganton

Royal, Dr. Ben F., Morehead City

M.D.; friend of the Brimleys and Dr. Metcalf; especially interested in herons and shorebirds; deceased.

Sanborn, Miss Nellie F., Birdhaven, Southern Pines

Shaftesbury, Dr. Archibald D., Woman's College of U.N.C., Greensboro

Archibald Davis Shaftesbury was a biology professor, the founder of the Carolina Marine Laboratory at Beaufort, N.C., and an authority on flea taxonomy. He served as the fourth president of NCBC and second editor of *The Chat*. Born about 1893, he died 9 April 1967 (*Chat* 31:53).

Shannon, Mrs. W.B., Pine Bluff

Shelburne, Miss Mary, City Museum, Washington

Director, Washington Field Museum, Bug House Laboratory, 1938; married James L. McLaurin; living at Bath, N.C.

Sigwald, John J., Box 1197, Wilson

Scout executive; NCBC vice-president; moved to Fayetteville; apparently did not return to North Carolina after WWII service.

Shaale, Mrs. A.J., 3401 Hillsboro Street, Raleigh

Worked with Harry T. Davis to have Raleigh declared a Municipal Bird Sanctuary; husband was an engineer with Carolina Power and Light Co.

Smithwick, Dr. D.T., County Historian, Louisburg

Stimson, Maurice E., Logan Stimson and Son, Statesville

Swann, Miss Ada B., Bryant Pond, Maine

Taylor, Mrs. Isaac M., Morganton

Urquhart, R.A., Lewiston

Farmer who lived outside Woodville, Bertie County; maintained many martin houses; born 1889, died 3 January 1947. Richard A. Urquhart Jr., a Raleigh CPA, recalls that his family used to visit the heronry in Urquhart Swamp along the Roanoke River. The area was logged after WWII but was made into a wildlife preserve in 1985. The younger Mr. Urquhart is a first cousin to Wallace Patterson Jr. of Chapel Hill.

Vernon, Dr. James W., Morganton

Westmoreland, Miss Ann, Goldsboro

Williams, A.S., Pinehurst

Wilson, Mrs. H.E., Parkview Apartments, Raleigh

Witherington, Robert H., Box 3253 N.C. State, Raleigh

Winston-Salem insurance agent; served on CBC Executive Committee 1980-1982; Life Member.

Wray, Dr. David L., N.C. Dept. Agriculture, Raleigh

Entomologist; revised *Birds of North Carolina* (1959); retired but maintains office in the Agriculture Department.

Acknowledgments. The following people kindly provided information about charter members: Carey H. Bostian, Frances Metcalf Browne, Zachary T. Bynum Jr., William Craven, John B. Funderburg Jr., Mary Shelburne McLaurin, Maude Stinson Morrow, Virginia Payne, Cleo Glover Perry, Thomas L. Quay, Margaret Baker Reid, R.A. Urquhart Jr., and David L. Wray. The archives of the Henderson Bird Club, compiled by Clara H. Robertson Flannagan, were also a valuable source of biographical data.



MEMBERSHIP

Carolina Bird Club, Inc., is a non-profit educational and scientific association founded in March 1937 and open to anyone interested in the study and conservation of wildlife, particularly birds. Dues, contributions, and bequests to the club are deductible from state and federal income and estate taxes. Checks should be made payable to Carolina Bird Club, Inc., and sent to CBC Headquarters, P.O. Box 27647, Raleigh, N.C. 27611.

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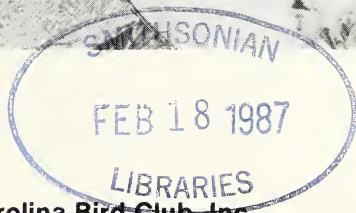
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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, 100 Clyde Morris Blvd., No. 155 Ormond Beach, Fla. 32074
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—W. David Chamberlain photographed a Northern Fulmar on the beach at Buxton, N.C., 4 November 1985. The inset at right shows the large nostril tubes on the upper bill.

The Breeding Birds of Battery Island, N.C.: An Update

MARK A. SHIELDS and ROBIN D. BJORK

Battery Island lies near the mouth of the Cape Fear River in Brunswick County, N.C. This site has supported a mixed-species heronry since at least 1938 (Brimley 1938), and the long-legged wading birds nesting there have been the subject of numerous studies (e.g. Quay and Adams 1956, Adams 1963, Parnell and Soots 1979, Allen-Grimes 1982, Parnell and McCrimmon 1984, Bjork 1986, Shields and Parnell 1986). Other species of birds breeding on Battery Island have received much less attention. The first and only complete list of breeding bird species on the island was published in 1960 (Funderburg 1960). Here, we provide an up-to-date list of the island's breeding birds and describe changes in vegetation and bird species that have occurred in the last quarter century.

STUDY AREA AND METHODS

Currently, Battery Island comprises about 40 ha, 75% of which is intertidal salt marsh. Four upland areas make up the remaining 25%. The largest upland (7 ha) is at the southern end of Battery Island. This site, designated the South Colony, consists of a dredged-material dome covered by grasses and forbs and fringed by a maritime thicket. Trees and shrubs are also scattered in clumps across the dome. A small (0.6 ha) upland, apparently of natural origin, lies 0.5 km to the north and is completely surrounded by salt marsh. This area, designated the North Colony, is covered by a maritime shrub thicket. The North Colony was the site of the earliest heronry reported on Battery Island (Brimley 1938). Two dredged-material uplands of about 1 ha each form the northwestern edge of the island complex. These sites were created in the late 1960s or early 1970s (J.F. Parnell, pers. comm.). Today, they are covered by grasses, forbs, and a few small trees. Detailed descriptions of the study site can be found in Bjork (1986) and Shields and Parnell (1986).

One or both of us visited the island one to four times per week from 5 May to 1 September 1982 and from 1 March to 1 September 1983, 1984, and 1985. We regularly recorded all species of birds seen and made particular note of nesting activities. In addition, we censused the wading-bird population during the peak of nesting each year. We have organized our list of breeding birds following the habitat classification scheme used by Funderburg (1960), except that we have combined the shrub-thicket and thicket-woodland categories.

RESULTS AND DISCUSSION

Funderburg recorded a total of 25 breeding bird species, but we found only 18 (Table 1). Seventeen species were present during both studies, eight were reported only by Funderburg, and only one species was unique to our study. Interestingly, the one species not found by Funderburg, the White Ibis, is now the most abundant breeding bird on the island.

All species that Funderburg found nesting in the salt-marsh habitat were recorded during our study. The salt marsh may be considered a "climax" community, and little change in the vegetation or nesting birds is expected over time. However, we found none

of the four species associated with the unvegetated dunes habitat. This was undoubtedly the result of vegetation succession on the South Colony's dome; unvegetated dunes no longer exist on Battery Island. Funderburg (1960) predicted this change in vegetation and avifauna.

Three of the six species that nested in the partially to fully vegetated dunes habitat similarly disappeared by the 1980s. We observed nesting by a fourth species in this group, the Common Nighthawk, only once. The reduction of breeding species in this habitat may also have been caused by increased density of herbaceous vegetation and by encroachment of woody vegetation. In addition, large numbers of Marsh Rabbits (*Sylvilagus palustris*) now inhabiting the island may have disrupted the activities of some ground-nesters and caused their decline (see Brown 1974, Courtney 1979). Rabbits may have little effect on the relatively aggressive Willets and American Oystercatchers, and these two species are still common nesters at Battery Island.

One species was lost and one gained in the shrub-thicket/thicket-woodland habitat. We cannot explain the disappearance of the Common Yellowthroat. The shrub-thickets preferred for nesting by this species are still available, and the species is a common winter resident. It is possible that we overlooked this small bird, even though its song is easily recognized. The addition of the White Ibis may be explained by the gradual northward expansion of the species' breeding range in the last 50 years (Sprunt 1944, Shields and Parnell 1983). We observed two additional species (Northern Mockingbird, *Mimus polyglottos*, and Northern Cardinal, *Cardinalis cardinalis*) in the thicket during the breeding season, but we found no direct evidence of nesting.

Funderburg (1960) found eight species of wading birds nesting in the North Colony. In 1961, many of these birds began nesting in the developing shrub-thicket in the South Colony, and in 1963 the first White Ibis nests were discovered there (Adams 1963). In 1985, the South Colony supported nine species of waders, while the North Colony supported only six species. Numbers of waders breeding in the North Colony have decreased as woody vegetation there has deteriorated rapidly during the past several years, apparently the result of storm damage and many years of over-fertilization by the birds themselves. Concomitant increases in nest numbers in the South Colony suggest that many birds have moved from the North to the South Colony. Continued expansion of the thicket onto the South Colony dome should ensure the availability of future breeding habitat for wading birds. However, declines in ground-nesters may be expected as the thicket replaces herbaceous vegetation.

In summary, most of the declines in breeding bird species over the past 25 years were directly related to vegetation succession on the dredged-material dome, a process that is fairly predictable (Soots and Parnell 1975). The fewest changes occurred in the most stable habitats, the salt marsh and the shrub-thicket/thicket-woodland.

NOTE: Battery Island is now a National Audubon Society research sanctuary. Because human disturbance is generally detrimental to the breeding success of birds, unauthorized visits to the island are prohibited. Persons interested in visiting the sanctuary *must* contact Dr. James F. Parnell, Department of Biological Sciences, University of North Carolina at Wilmington, Wilmington, NC 28403.

TABLE 1. Breeding bird species on Battery Island, N.C. Habitat types and data for 1960 are from Funderburg (1960). An "x" indicates presence, a dash indicates absence. The maximum yearly nest number of each species during our study, when known, is given in parentheses.

Habitat type/species	1960	1982-1985
Salt Marsh: herbaceous, <i>Spartina-Juncus</i> complex		
Clapper Rail (<i>Rallus longirostris</i>)	x	x
Marsh Wren (<i>Cistothorus palustris</i>)	x	x
Seaside Sparrow (<i>Ammodramus maritimus</i>)	x	x
Red-winged Blackbird (<i>Agelaius phoeniceus</i>)	x	x
Open Dunes: unvegetated		
Wilson's Plover (<i>Charadrius wilsonia</i>)	x	—
Gull-billed Tern (<i>Sterna nilotica</i>)	x	—
Least Tern (<i>Sterna antillarum</i>)	x	—
Black Skimmer (<i>Rynchops niger</i>)	x	—
Herbaceous Dunes: partially to fully vegetated		
American Oystercatcher (<i>Haematopus palliatus</i>)	x	x (18)
Willet (<i>Catoptrophorus semipalmatus</i>)	x	x
Mourning Dove (<i>Zenaida macroura</i>)	x	—
Chuck-will's-widow (<i>Caprimulgus carolinensis</i>)	x	—
Common Nighthawk (<i>Chordeiles minor</i>)	x	x (1)
Eastern Meadowlark (<i>Sturnella magna</i>)	x	—
Shrub-thicket/thicket-woodland		
Common Yellowthroat (<i>Geothlypis trichas</i>)	x	—
Red-winged Blackbird	x	x
Green-backed Heron (<i>Butorides striatus</i>)	x	x (3)
Little Blue Heron (<i>Egretta caerulea</i>)	x	x (196)
Cattle Egret (<i>Bubulcus ibis</i>)	x	x (306)
Great Egret (<i>Casmerodius albus</i>)	x	x (233)
Snowy Egret (<i>Egretta thula</i>)	x	x (332)
Tricolored Heron (<i>Egretta tricolor</i>)	x	x (405)
Black-crowned Night-Heron (<i>Nycticorax nycticorax</i>)	x	x (59)
Glossy Ibis (<i>Plegadis falcinellus</i>)	x	x (163)
White Ibis (<i>Eudocimus albus</i>)	—	x (4849)
Fish Crow (<i>Corvus ossifragus</i>)	x	x
Boat-tailed Grackle (<i>Quiscalus major</i>)	x	x

ACKNOWLEDGMENTS

Our research at Battery Island was funded by the National Audubon Society, the New Hope and Forsyth Audubon Societies, Chapter 35 of the Telephone Pioneers of America, and the Charlotte Hornets Nest Council of the Telephone Pioneers of America. Logistic support was provided by the Department of Biological Sciences, UNC-Wilmington. We thank J.F. Parnell for his assistance through all phases of our studies.

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Department of Biological Sciences, University of North Carolina at Wilmington, Wilmington, N.C. 28403. (Present address of MAS: Wyoming Cooperative Fishery and Wildlife Research Unit, Box 3166, University Station, Laramie, Wyoming 82071; present address of RDB: Florida Game and Freshwater Fish Commission, 4005 S. Main Street, Gainesville, Florida 32601.)

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Arthur T. Wayne

W. DAVID CHAMBERLAIN

When the ornithological history of South Carolina is reviewed, there is but one person whose contributions are comparable to those of Audubon. In fact, when the impact Arthur Trezevant Wayne made on the body of scientific knowledge in the state is examined, his contributions exceed those of Audubon. No other ornithologist, in past or recent times, can match the time spent afield—47 years—that Arthur Wayne devoted to the study of birds. During this long career, which was virtually uninterrupted, Wayne added 45 species to the state list, published 125 scientific papers, wrote the first state bird book, and became recognized as the most eminent Southern ornithologist of his time (Gething 1930).

Born in Blackville, S.C., on 1 January 1863, Arthur Wayne was the son of an architect with an English, Scottish, and French Huguenot heritage. The Wayne family was originally from Charleston, but had removed to Blackville to escape dangers the Civil War had brought to the Charleston area. At the close of hostilities, the family returned to Charleston, where young Wayne would finish high school with honors in 1880 (Sprunt 1931).

At the age of 17, Arthur Wayne obtained his first job in a time when few young men in the South could afford to go on to college. Wayne's first employment was with Barden and Murdock, a cotton brokerage firm. Even in the post-Civil War period cotton export was still a major business in Charleston, and the sale and shipment of raw cotton required constant accounting and processing of orders. This job lasted until 1883 when Wayne went to work for another cotton brokerage firm, Lesesne and Wells (Sprunt 1931). The tasks of the business world did not hold Wayne's attention for long.

In 1874, when Arthur Wayne was a schoolboy, he was befriended by Gabriel Manigault, then director of the Charleston Museum. At this time Dr. Manigault was not only director, he was also the entire staff. This friendship encouraged Wayne's interest in science, particularly in birds. Wayne spent many hours in the field searching for specimens to add to the Museum's collections maintained by his friend and mentor. Manigault saw to it that Wayne learned the art of preparing a bird skin from an elderly Englishman the Museum hired to prepare its collections (Sprunt 1931).

The relationship between Arthur Wayne and Dr. Manigault was a solid one in which Manigault saw great promise. In 1883, William Brewster made his first visit to Charleston to visit his friend Dr. Manigault. Wasting no time, Manigault spoke highly of young Wayne and introduced him to Brewster. This single meeting changed the fate of Arthur Wayne and of ornithological history in South Carolina.

In the 1880s William Brewster was a leading figure in American ornithology. He had founded the Nuttall Club in his home town of Cambridge, Massachusetts, in 1873. This organization would later grow into the prestigious American Ornithologists' Union, which Brewster helped to establish in 1883. As the awareness of the need for bird protection increased, William Brewster would become, in 1896, the first president of the Massachusetts Audubon Society. This organization was the forerunner of what is today the National Audubon Society (Hanley 1977).

At the time of Wayne's first meeting with him in 1883, Brewster was associated with the Harvard University Museum. From this position, which Brewster held for several decades, he traveled extensively, collecting specimens and adding data to the collection of the Harvard Museum.

There is little wonder that meeting a nationally known scientist like William Brewster would excite a 20-year-old Wayne. The true level of this excitement, however, was deep enough to drive Arthur Wayne for the balance of his life. He finally had found a well-respected elder who advocated a life's work doing exactly what Wayne wanted all along, studying and collecting birds. From this point forward Arthur Wayne dropped any pretense of involvement in the business world and concentrated all his efforts on his real interest. William Brewster instilled in Wayne a burning interest in bird collection, particularly that of rare species. As was the custom in Victorian times, the collection of bird skins and eggs was the accepted practice of establishing data on bird populations. In the days before adequate binoculars and cameras, there was no other way of verifying or identifying the various regional forms of bird life.

During Brewster's first visit to Charleston in the spring of 1883, he spent a great deal of time afield with young Arthur Wayne. Part of this time was spent in search of Swainson's Warbler, a bird thought to have been lost to science since 1833. Although the first attempt ended in failure, Wayne found Swainson's Warbler a year later, in the spring of 1884. This discovery was made during Brewster's second trip to the Charleston area, and Wayne was thrilled to have Brewster submit an article on his discovery to *The Auk* (Wayne 1910).

William Brewster did more for Wayne than merely stirring a passion for birds. Perhaps as great a contribution was his insistence on accurate record keeping. This would extend not only to observations, but also to specimen and egg collection. It is very likely that Wayne already knew the value of careful recording and particular attention to detail, both from the cotton brokerage business and through the Victorian mindset of the time; but William Brewster stressed its importance to the scientific approach.

Additionally, Brewster, who was an avid collector and firm believer in the practice, convinced Wayne that money could be made by providing specimens to private collectors as well as museums. This concept sparked Wayne to make several collecting trips outside South Carolina and encouraged wide correspondence to market his specimens.

Wayne had begun to turn his avocation into a vocation as early as 1882, when he made a 4-month collection trip to Greenville, S.C. Brewster's influence, however, caused Wayne to make several collecting trips to Florida, beginning in 1892. The first trip was headquartered out of Branford, Florida, where Wayne began collecting in March. By May he wrote to Brewster that he had secured a good many Bachman's Warblers and several fine Ivory-billed Woodpeckers. The trip was operated on a shoestring, with Wayne asking Brewster for \$13 due him from the previous year, adding "... I have nothing and I am dependent upon what I sell to meet my expenses" (Wayne to Brewster, 16 May 1892).

By September 1892 the trip was successful to the point that Wayne had collected 13 Ivory-bills and 43 Bachman's Warblers. He offered the Ivory-billed Woodpecker skins for \$20 each and those of Bachman's Warbler for only \$2.50 each (Wayne to Brewster, 16 September 1892).



Arthur T. Wayne and Mrs. Wayne were photographed on the front steps of their home at Porcher's Bluff, Mount Pleasant, S.C., about 1920. This is one of the only three known photographs of the famous South Carolina ornithologist.

In December 1892, Wayne's collecting found him along the Swanee River, where he shot six Carolina Paraquets. Of this soon-to-be extinct species he wrote, "It is the hardest bird I know of to get in full plumage, and *fine*. The tails of nearly every one are very ragged. They feed upon the green pine mast which soils their feathers." The Swanee River held a special fascination for Wayne, and he pleaded to Brewster to join him promising, "I can positively shoe you *any day* at least two Ivory-bills" (Wayne to Brewster, 10 December 1892).

By 1893, even Wayne apparently began to realize that many of the spectacular species he was collecting were beginning to decline. His first observation of this was on the rarity of the Carolina Paraquet. Still, with the rate at which he collected, there is no wonder rare birds were becoming more rare. At Old Town, Florida, Wayne shot 11 Bachman's Warblers in 3 hours (Wayne to Brewster, 7 January 1893). By March 1893,

he wrote that Bachman's Warblers "... are very rare here and not one tenth as numerous as at Branford" (Wayne to Brewster, 27 April 1894). By the end of April 1894, Wayne was collecting in Jefferson County, Florida. He noted at this time that "Bachman's Warbler is an excessively rare bird here and I only took nine" (Wayne to Brewster, 27 April 1894).

The actual value of Wayne's collecting trips was questionable in spite of his apparent success. The buying and selling of bird skins was simply not adequate to provide any sort of living. In 1901 he wrote Brewster that "I have sold nothing whatever this year of any consequence and I am worse off than I have ever been. Everything has advanced in price until it is a struggle to get something to eat" (Wayne to Brewster, 2 August 1901).

FINDS NEST OF BACHMAN'S WARBLER

Wayne's experience with rare species in Florida would eventually prove to be extremely valuable at home. This is especially true in regard to Bachman's Warbler. Wayne had suspected that the bird bred actively north of Florida and wrote of his suspicions about Georgia habitat as early as 1894 (Wayne to Brewster, 27 April 1894). In 1901 Wayne rediscovered Bachman's Warbler in South Carolina, taking a bird at Fairlawn Plantation, Christ Church Parish, near his home in Mount Pleasant. This accomplishment was viewed as a significant scientific feat, for the bird had not been observed in South Carolina since its description by Audubon in 1833. Five years later, on 17 April 1906, he located two nests with eggs in the same portion of Pon Swamp (Wayne 1910).

While Wayne's first major contribution was the rediscovery of Swainson's Warbler in 1883, his most famous would have to be that of finding Bachman's Warbler. Other discoveries, while somewhat less spectacular, are nevertheless important, such as his description of Wayne's Warbler (*Dendroica virens waynei*) and Wayne's Clapper Rail (*Rallus longirostris waynei*) as well as numerous state records.

William Brewster encouraged Wayne to publish his findings, and Wayne began in 1884 with his first article on the Chuck-will's-widow in *Science Record*. This was followed by a paper on Swainson's Warbler in the *Proceedings of The Elliott Society* in 1885 and with his first article in *The Auk* in 1886. Arthur Wayne went on to publish a total of 125 scientific papers during his career. His most important contribution, however, came in 1910, through his long association with the Charleston Museum.

In 1905 Wayne was asked to be honorary curator of ornithology at the Charleston Museum. He had begun his long association with the institution as a schoolboy and had benefited greatly from his friendship with its director, Dr. Gabriel Manigault. Writing to Brewster in 1906, Wayne admitted, "I only accepted the position to help Mr. Rhea, who is a very nice man. The birds have gone to ruin and it makes me very sad everytime I go to the museum" (Wayne to Brewster, 27 April 1906).

WRITES STATE BIRD BOOK

In November 1905 Wayne decided to write a book on the birds of South Carolina. He pleaded with his now-elderly friend Brewster to become involved in the project with him by writing the introduction and editing the manuscript. At the same time Wayne freely admitted that he had no money to publish the book (Wayne to Brewster, 2 October 1907). Although Brewster declined to provide any assistance, Paul Rhea, then director of the Charleston Museum, stepped in to offer publication as the first in a series of Museum

contributions. Wayne's *Birds of South Carolina* was published in 1910 through the Charleston Museum. It was dedicated to William Brewster (Wayne 1910).

By the time the *Birds of South Carolina* was published, Arthur Wayne was already well known in the scientific community. In addition to his long friendship with Brewster, Wayne counted among his corresponding friends the likes of A.C. Bent, John Thayer, Joseph Grinnell, C. Hart Merriam, Outram Bangs, and Frank Chapman (Wayne 1910).

In order to appreciate Arthur Wayne's contribution, it is important to look at his personality. Physically small in stature, he was extremely energetic. He never owned a car and relied on his feet and a row boat to get around. He would frequently walk great distances and on one occasion logged 24 miles in one day while searching for an assistant lost in the swamp (Wayne to Brewster, 21 May 1906). On several occasions he injured himself in the field by slipping while climbing trees or by sticking thorns in his eye. None of the accidents was enough to prevent him from completing his day's work (Laurie and Chamberlain 1979).

Wayne's personality was such that no detail escaped him. He was exceedingly careful in collecting and presenting specimens to the point of searching the ground for a missing feather after shooting a bird or not allowing anyone to touch the bird skins once in his collection (Sprunt 1931).

On top of all this compulsive behavior, Arthur Wayne was also obsessed with seeking the truth. He was constantly on guard against exaggeration and undeserved acclaim. In 1917 he wrote to fellow collector and friend Gilbert Rossignol that "I could not go to bed and sleep if I knew I had told a falsehood" (Wayne to Rossignol, 1 February 1917).

In the face of adversity, Wayne remained amazingly buoyant. Financial affairs were always a problem throughout his life. In 1911 he wrote that he was unable to support himself and his wife on \$110 for 9 months or more, but was still not going to give up the "bird business." Even the publication of his book did not net any money (Wayne to Brewster, 16 September 1911, 21 April 1917).

Arthur Wayne's unique personality played an important role in molding the future of South Carolina ornithology. Among his students who learned firsthand the value of frugality, strict attention to detail, and extreme caution were such prominent 20th-century ornithologists as Edward Dingle, Alexander Sprunt Jr., Herbert Ravenel Sass, Francis Weston, and E. Burnham Chamberlain.

ELECTED A.O.U. FELLOW

Two years before his death, Wayne was elected a fellow in the American Ornithologists' Union. This recognition, in 1928, pleased him tremendously because he had revered the organization since his introduction to bird work.

On 5 May 1930 Wayne suffered a stroke while showing his bird collection to Sprunt and two companions. He died later that day (Gething 1930).

Arthur Wayne contributed a great deal to the ornithology of South Carolina with his taking of record specimens and his various scientific papers. Perhaps his greatest contribution to science was his demonstration of the importance of intensive field work conducted in a very limited area. It must be remembered that with the exception of the Florida collecting trips and two others in South Carolina, virtually all of Wayne's discoveries were

made within walking distance of his house. Never before and, quite likely, never again will anyone else produce comparable results from such a limited geographic area.

Wayne's other major contribution was to the students he gathered around him. The importance of record keeping, the eye for detail, the need for collecting—all of these values contributed to the overall conservative scientific approach that would become the mark of South Carolina's major ornithologists for the next 50 years.

Arthur Wayne was one of the few fortunate enough to do exactly what he wanted to do for life. Although he never achieved riches and frequently had to struggle, Wayne made a tremendous impact on South Carolina ornithology. "It is," he wrote, "a perfect passion for me to be in the woods . . . and all I want is a living out of it" (Wayne to Brewster, 22 February 1911).

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CBC Roundtable

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Plains Research Station, Rocky Mount, N.C. A combine was harvesting a field of soybeans while a mature Red-tail glided along above at about 100 m. As I watched, the bird folded its wings and stooped in the direction of the machine. About 50 m from the combine, the hawk braked and plunged to the ground. I immediately heard the scream of a rabbit in distress. I located the hawk with my binoculars. The bird was, by then, shielding its catch and glaring back at me. Finally the hawk rose laboriously with its prey, apparently a young rabbit. As the bird flapped to a scope of woodland nearby, I reflected that a favorite pastime of my childhood was chasing assorted varmints flushed by farm machinery. Evidently that particular Red-tail took a more utilitarian view of such situations, although I hope it found a bit of adventure, and even felt suspense, from waiting near a soybean combine.—JOSHUA A. LEE, 5104 Newcastle Road, Raleigh, N.C. 27606.

Charlotte Hilton Green

ELOISE F. POTTER

Although John H. Grey Jr. was the first to suggest the formation of a statewide bird club in North Carolina, Charlotte Hilton Green probably did more than anyone else to ensure the success of the project. As president of Raleigh Bird Club, an active member of the Raleigh Woman's Club, and nature columnist for *The News and Observer*, Mrs. Green had the right connections to call together the founders who met in Raleigh on 6 March 1937 and to publicize the activities of the fledgling North Carolina Bird Club.

Now living in The Albemarle Retirement Community at Tarboro, N.C., Mrs. Green at age 97 remains concerned about the conservation of natural areas. Failing hearing and eyesight curtail her activities, but she still maintains personal and business correspondence with the assistance of her friend, Elizabeth Moye.

Born in Dunkirk, New York, on 17 October 1889, Charlotte Hilton started teaching in a one-room schoolhouse in the hills of Chautauqua County, overlooking Lake Erie (Earley 1983). She had about 50 students in eight grades, plus the chore of cleaning the classroom. This was the 1909-1910 school year, and her salary was \$10.50 per week. It was a year of hard work and many problems, but there was also the excitement caused by the appearance of Halley's Comet. The young teacher and a few of her students arose at 3:30 on a bitterly cold morning in March of 1910 to view the comet.

Upon learning that Cornell University had published a series of leaflets for distribution to rural schools, Miss Hilton sent for a supply. The class started with "Learn A Bird A Week." From the beginning the young teacher had a talent for guiding the attention of restless students to the birds outside the classroom window. Most youngsters in those days were used to shooting birds, not studying them, but Charlotte made nature study a fascinating subject.

In 1913 Miss Hilton received a matching grant from Grange No. 1 in Fredonia, N.Y., to attend summer school at the Chautauqua Institute. That year Cornell was starting a special series of classes to encourage agriculture students to come to the university. Ruby Green Smith gave a course in nature study. While at Chautauqua, Charlotte met her future husband, Ralph W. Green—Dr. Smith's brother.

After a corn roast given by one of the directors for his Cornell students, Mr. Green walked Miss Hilton to her dormitory and asked if she would be interested in going on a canoe trip the next evening. She accepted. It was, she still recalls, a wonderful night, with a full moon and the music of a band concert in the distance. Not realizing how late it was, they returned to the campus at midnight and were arrested. (Students had to be in the dorm by 10:30 p.m.) Mr. Green explained the situation to the authorities and persuaded them to return Miss Hilton's season ticket. That called for other dates, and during the summer the two met regularly to share the pleasures of walking, talking, and boating. "His wide reading and traveling opened new worlds to me," she said. Ralph and Charlotte were married 4 years after the day they met.

"The nature study movement started at Cornell University early in the century. My husband's family was tied up with it," Mrs. Green recalls (Earley 1983). Anna Botsford Comstock, called the mother of the nature study movement, wrote a very popular handbook of nature study. Liberty Hyde Bailey was also one of the originators of the

nature study idea. At Cornell during that exciting period were Arthur A. Allen (pioneer in color photography of birds and the recording of bird songs, and later founder of the Cornell Laboratory of Ornithology) and Louis Agassiz Fuertes, the great wildlife artist. Through her husband's family, Mrs. Green came to know most of the early leaders in the popularization of bird study in the eastern United States.

During World War I, Ralph Green was with the Division of Publications in the Department of Agriculture in Washington, D.C. Because of the wartime housing shortage, the Greens had to buy a small place in East Falls Church, Virginia. "It was our first home, and we called it One Acre," Mrs. Green said. While living there, she taught fifth grade for 2 years.

MOVED TO RALEIGH

In mid-1920 the Greens moved to Raleigh, N.C., where he was with the N.C. Department of Agriculture and was also connected with N.C. State College. During the summer of 1920, Mrs. Green and 25 other faculty wives formed the N.C. State College Woman's Club.

One of the first places Ralph Green visited upon arrival in Raleigh was the State Museum of Natural History. During a meeting with H.H. Brimley, the curator, Mr. Green mentioned his wife's interest in bird study. Brimley gave him a copy of *Birds of North Carolina*, which had been published the previous year. The authors were T. Gilbert Pearson and the brothers C.S. and H.H. Brimley. Later Mrs. Green toured the museum with H.H., and both brothers became her good friends. Little did she realize upon first acquaintance that she and these two immigrants from England would become instrumental in the founding of a state bird club.

In 1923 the Greens built a home on White Oak Road, which was practically in the country at that time. Woodhaven was the first of several homes they owned in the same neighborhood. Mrs. Green promptly set about improving the natural environment around her home by putting up bird boxes, providing bird baths and feeding stations, and planting vegetation that would attract wildlife. The Greens operated one of the early bird-banding stations in North Carolina, and visitors soon came to their home to learn more about the birds. They joined Mrs. Green on walks along Crabtree Creek and through nearby woodlands.

Mrs. Green continued her college studies after moving to Raleigh and earned a bachelor's degree in 1932. She later took courses at the University of North Carolina, Cornell University, the University of Colorado, and the University of Mexico.

COLUMN BEGUN

Mrs. Green's first contribution to *The News and Observer* was a long article about the reconstruction of Williamsburg, Va. In 1932, she began writing her "Out-of-Doors in Carolina" column for the Raleigh newspaper. During her 42 years as a nature columnist, Charlotte Hilton Green touched upon nearly every field of the biological sciences, supported numerous conservation causes, and explained complex environmental issues in laymen's terms. Frank Smethurst of *The News and Observer* told Mrs. Green, "Be accurate as far as you go but for God's sake don't get too technical. Our John Farmer just can't take it" (Earley 1983). Heeding her editor's advice, Mrs. Green worked very hard to emphasize the human-interest angle. Her first goal was to develop in others an appreciation of "God's good Earth" (Harrelson 1986).

Soon after the column first appeared, Hattie S. Parrott of Kinston, then state director of primary education, began recommending "Out-of-Doors in Carolina" as supplemental reading material. Ms. Parrott suggested that the columns be collected and published in a book. *Birds of the South*, issued by the University of North Carolina Press in 1933, was an instant success, and it was republished by Dover Publications in 1975. The introduction to this book was written by C.S. Brimley. *Trees of the South*, with an introduction by J.S. Holmes, the state forester of North Carolina, came out in 1939. It was the first book that outlined the leaf, fruit, and flower of southern trees. Some people criticized the tree book because it was written for children to study and understand, but Mrs. Green still believes that her approach was a good one (Harrelson 1986).

Each chapter in Mrs. Green's two books begins, as did her columns, with a few lines of appropriate poetry to help the reader get into the mood for the text that follows. The idea of using nature poems in this manner came from Ms. Comstock. Most of the poems used in Mrs. Green's books were written by North Carolinians who permitted their creations to be used without fee (Harrelson 1986).

Mrs. Green was always an independent woman who thought nothing of traveling alone to New York City for the annual National Audubon Society meetings. Each fall for many years she renewed friendships with Audubon leaders such as Carl Buchheister and Roger Tory Peterson. During the early 1930s she and her husband traveled extensively together, riding on muleback down the Grand Canyon and touring California. In 1938 she drove alone to Colorado to attend the University of Colorado, and the next year, accompanied by Ms. Parrott, she drove to Mexico for the summer session at the University of Mexico.

GREENACRES

In 1938 the Greens purchased a large tract of land on White Oak Road. Developers had refused to buy the acreage, saying that Raleigh would not grow in that direction. Although the new owners intended to sell some of the land as building lots, Mrs. Green began developing Greenacres into a wildlife sanctuary and arboretum. Her consultant in this project was Dr. B.W. Wells, a professor of botany at N.C. State (Green 1939) and the author of *The Natural Gardens of North Carolina*. Forestry students from the college treated damaged trees, and neighbors helped remove refuse, fallen branches, and undesirable plants. The area became a special place to the many children who loved to play on the rocks and hills, to follow trails once traveled by Indians, and to build dams in the stream. Greenacres is still visited annually by horticulture classes from N.C. State University (Newsom 1986).

Ralph and Charlotte Green built the first house in Greenacres and called it The Willows. The handsome structure—with extensive additions now one of the finest homes on lower White Oak Road—proved unsuitable for their needs; so the Greens built a simple residence called Brookside. This small but very attractive house was Mrs. Green's favorite. Here they lived throughout World War II. R.W. tended his war garden, and Charlotte kept on with her work and writing. After the war, military veterans rapidly increased the enrollment at N.C. State College; so Mr. Green returned to help with registration. He became ill and was an invalid for 6 months prior to his death on 15 June 1946.

Realizing that, as much as she loved it, she could not keep Brookside alone, Mrs. Green made plans for another home. On the last vacant lot remaining in Greenacres, she

built a small, two-story dwelling. She lived in the upper story among the trees—hence the name Treetops—and rented the lower level as a furnished apartment.

Once she was settled in Treetops, Mrs. Green decided that if she was ever going to see the world, she had better get started. Seeing the world had been one of her ambitions since childhood, when she would lie awake in her bed listening to the train whistles echoing through the night. Her travels eventually took her to Europe, Africa, Japan, the Galapagos Islands, and other parts of South America. During one of two trips beyond the Arctic Circle, she spent a weekend with Eskimos in Kotzebue (Harrelson 1986). On one of the many occasions when, in her eagerness to enjoy new experiences to the fullest, she fell behind the group, she found herself locked up in a museum in Budapest, Hungary (Earley 1983). Mrs. Green also continued to explore North Carolina. At age 60 she accepted an invitation to accompany a group of Girl Scouts and Boy Scouts on a 2-day canoe trip from Raleigh to Kinston.

On her travels the writer-naturalist picked up good material, and exciting personal experiences, to share with the readers of her columns and magazine articles. Mrs. Green has been a contributor to numerous newspapers and magazines, including *The Washington Post*, *Nature*, *Progressive Farmer*, *Hollands*, *The Woman*, *Ladies' Home Journal*, and *Wildlife in North Carolina*. She also wrote for *The Chat* (Green 1943, 1948, 1952) and edited the "Among Our Members" feature for about a year.

CBC PRESIDENT

In 1957 Mrs. Green was elected president of Carolina Bird Club (Potter 1986). In her four "President's Page" articles, she supported forming Audubon Junior Clubs and sponsoring Audubon Screen Tours (Green 1957a), donating nature books and conservation magazines to school and community libraries (Green 1957a,b; 1958), cooperation of CBC with other conservation-minded organizations (Green 1957b), investigation of ways to reduce bird mortality at airport ceilometers and TV transmitter towers (Green 1957c), distribution of hawk leaflets (Green 1958), and enlarging and improving *The Chat* (Green 1958). "We must not forget that we have created something fine over the past 20 years and we want to strengthen it still more in the years ahead," she concluded (Green 1957b).

As CBC president, Mrs. Green put to use her long experience as a clubwoman. A member of Raleigh Woman's Club since 1920, she served as chairman of committees on Conservation, Literature, and International Relations. She also held similar positions in the N.C. Federation of Women's Clubs. She has held memberships in Delta Kappa Gamma, of which she is now a state honorary member, as well as in the N.C. Writers' Conference, Raleigh Natural History Club, and N.C. Shell Club. She is one of the founders of the Wake County Democratic Women's Club.

In 1972 Mrs. Green (1972a-d) wrote "Carolina Bird Club—Past and Present," a four-part article for *Wildlife in North Carolina*. While telling the history of the bird club, Mrs. Green revealed a great deal about how she used her influence with friends from other states to promote nature study in North Carolina. For example, when ornithologist Arthur A. Allen traveled southward in the early 1930s to record for the first time the songs of southern birds, he stopped over with the Greens in Raleigh. As a courtesy to his host and hostess, Dr. Allen disregarded his usual fee and presented his film-illustrated lecture at State College "for whatever we could take in" (Green 1972a).



Charlotte Hilton Green, ready for a CBC field trip, stands outside the Pisgah Inn, May 1971. (Photo by Robert C. Ruiz)

Mrs. Green used her nature column to try to stop the needless slaughter of birds, especially the migratory hawks. Soon the garden clubs and the North Carolina Bird Club were distributing flyers showing that most hawks eat rats and mice in preference to the farmer's poultry (Potter 1986). Mrs. Green was also a strong supporter of the Municipal Bird Sanctuary movement.

Because of her many services to the people and wildlife of North Carolina, Mrs. Green received the Conservation Communications Award from the N.C. Wildlife Federation and the National Wildlife Federation. Shortly afterwards she was featured in the "Carolina Profile" section of *Wildlife in North Carolina* (Earley 1983). At that time she was in the midst of packing many years of memorabilia in preparation for the move to Tarboro, but she was thinking about young people and the future.

"I'm disappointed in that there's no longer an Audubon Junior Club. Eleven million children went through the Audubon Junior Club. That's where Roger Tory Peterson got started," Mrs. Green told Lawrence Earley. "Children are too glued to their TV today. They are not getting out of doors now; they are not learning about the out of doors. I think parents themselves ought to be more interested," she continued. "The study of nature opens up a whole new way of life. There's always something of interest. Everywhere you go there's something to see."

Currently a group of Raleigh residents is conducting a campaign to raise funds to help the city purchase a 9-acre tract near Mrs. Green's former home on White Oak Road.

The additional land will enhance and preserve the natural area she often described in "Out-of-Doors in Carolina." Supporters of the proposed park want it to be named in honor of Charlotte Hilton Green because she is, in the words of William Joslin, "the one person in the Raleigh community most clearly identified with conservation of natural areas."

Mrs. Green always proudly claimed to have been among those who "brought the nature study movement" to North Carolina. The thousands of North Carolinians whose lives have been enriched by her enthusiasm for natural history now have an opportunity to say "thank you" by establishing a park that will enable future generations of city children to grow up appreciating and respecting "God's good Earth."

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North Carolina State Museum of Natural Sciences, P.O. Box 27647, Raleigh, N.C. 27611

[EDITOR'S NOTE: Contributions to the park fund are tax deductible and may be addressed to The Charlotte Hilton Green Park Association, P.O. Box 19173, Raleigh, N.C. 27619. The tract to be purchased will connect two neighborhood parks to the Raleigh Greenway on Crabtree Creek.]



Roundtable

... with Louis C. Fink

Request for Bluebird Nesting Data

Dorothy J. Foy, who maintains 300 bluebird boxes, is researching the status of the Eastern Bluebird in North Carolina. She would like to receive reports from CBC members including the following information:

1. Number of boxes, starting in 1979 and ending with 1984 nesting season.
2. Number boxes used by other species (names of species if known).
3. Number boxes used by House Sparrows, including how many fledged.
4. How many bluebird eggs and how many fledged.

Mrs. Foy promises a response to everyone who provides data for her project. Send reports to: DOROTHY J. FOY, P.O. Box 457, Oriental, N.C. 28571.

More on Opportunism of the Red-tailed Hawk

The Red-tailed Hawk (*Buteo jamaicensis*) seems more abundant in the Carolinas today than, say, 30 years ago. Perhaps that is because people shoot the birds less often now that free-roaming poultry is scarce, but more likely resurgence in numbers of this hawk is because of increases in pasture land and super highways with the edges between forest and grassland that are favored by the meadow mice and cotton rats the Red-tail prefers.

Still, the Red-tail is extraordinarily adaptable in its pursuit after food, not specializing on rodents by any means. The Craigheads describe the species as an "unrestricted" feeder on any kind of animal it can subdue, and that includes snakes, rabbits, small- and medium-sized rodents, bats, pheasants, and large insects. In fact, the species seems, at times, to be opportunistic to a fault. Years ago when I lived in California, the keepers at the San Diego Zoo had problems in winter when the Western Red-tail flocked onto the grounds to prey on free-running pheasants and jungle fowl.

I thought I had seen the ultimate in adaptability in Red-tails when W.G. Brown Jr. and I watched a bird take apparently moribund fish from the surface of a lake near Raleigh, N.C. (Chat 44:16, 1980). Later that morning what was likely the same bird flapped across the lake clutching prey with a flock of crows in hot pursuit. About halfway across, the hawk dropped its quarry, a fledgling crow. The crows harrassed the hawk for more than half an hour.

As unusual as fishing by a Red-tail might have seemed, I think the following behavior was just as bizarre. It was a brisk afternoon in November 1985 at the Upper Coastal

(Continued on Page 110)

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Second Record of the Cape Petrel in the Western North Atlantic

DAVID S. LEE

North Carolina State Museum of Natural Sciences
P.O. Box 27647, Raleigh, N.C. 27611

On 26 July 1985 Captain Allen Foreman and his mate John Gallup saw a bird they identified as a Cape Petrel (*Daption capense*). It was flying 42 miles ENE of Oregon Inlet, Dare County, N.C., and was over water 200 fathoms in depth. The bird was watched for a minute or more while near a Black Tern (*Chlidonias niger*). The captain and mate each independently described the size, plumage, and behavior of the bird to me in late July of 1985 and again in June of 1986. Although neither was aware of the significance of the record, on both occasions they were able to recognize the species from illustrations in standard field and seabird guides. Because of the distinctive plumage of the species in question and their familiarity with local marine birds (Captain Foreman has been accompanying me during my seabird studies for the last 9 years), I have confidence in the authenticity of this record. For example, Foreman and his mate Dick Harris provided sight descriptions of Masked Boobies (*Sula dactylatra*) from off the North Carolina coast (Lee and Platania 1979) several years prior to the "official" recognition of their occurrence presented by bird watchers (Davis and Needham 1983). Likewise, they alerted me to the presence of two types of tropicbirds off the North Carolina coast prior to confirmation that Red-billed Tropicbirds (*Phaethon aethereus*) were in the North Atlantic off the Carolina coast. While there is always some question of the validity of records not documented by specimens or photographs, in this particular case, the fact that this sight record is not corroborated by someone with a formal background in bird study has little, if any, bearing on judging the validity of the identification.

The only other record for the Cape Petrel [formerly Cape Pigeon] for eastern North America is of a single bird collected in June of 1873 at Harpswell, Cumberland County, Maine (Norton 1922). Several sight records are available for the region off the coast of California, with a 1963 report off Monterey being the best documented (see A.O.U. 1983). There are several reports of Cape Petrels off the European coast, at least five of which are fairly well substantiated. Single specimens were shot in the Mediterranean off France in October 1844, off Wales in 1879, and off Ireland in October 1881. A skull was found on a Netherlands beach in 1930, and an immature was captured off Sicily in September 1964 (Cramp and Simmons 1974). Nevertheless, most, if not all, records from

the northern hemisphere have been treated as suspect by some authors for various reasons.

Cape Petrels are abundant in the southern hemisphere and are highly migratory, with birds exhibiting circumpolar movements and moving northward regularly into subtropical seas, occasionally north to the equator. As in subantarctic albatrosses and South Polar Skuas (*Catharacta maccormicki*), small numbers apparently range north of the equator during the austral winter. Furthermore, the Cape Petrel's habit of following ships for long distances could account for the occasional records of this species in the northern hemisphere. Murphy (1936) cites one example of a bird following a ship across the equator in the Pacific Ocean to 16°N and King (1839) commented on a marked bird that followed a British Navy ship for 5000 miles.

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Leach's Storm-Petrel on Lake Marion, S.C.: Second Specimen for State; First Record for Interior of Carolinas

W. POST

The Charleston Museum
Charleston, S.C. 29403

C.A. POST

Route 6, Box 273
Fairview, N.C. 29830

On 25 July 1986 at about 1300 as we were crossing Lake Marion, at a point about 10 km NE of Eutawville, we flushed a Leach's Storm-Petrel (*Oceanodroma leucorhoa*) from the water surface. The bird circled our boat, and we were able to secure it. The collection point is in Clarendon County, near the center of the lake and about equidistant (2 km) from the northern and southern shores. This point is 90 km from the coast. We assume that the bird was blown inland by Hurricane Bob, which passed over southern Charleston County and then moved inland, over Lakes Moultrie and Marion, on 24 July.

The petrel is a male, with fully ossified skull, small testes (< 1 x 2 mm) no subcutaneous fat, and an empty stomach. The weight was 35.8 g. and wing length is 149.2 mm. The bird was prepared as a study skin (WP 85.011; ChM 1986.43) with detached, flattened wing and a separate partial skeleton saved.

The only other specimen of this form taken in South Carolina is a wing that was found on the beach of the Isle of Palms, Charleston County, on 20 September 1926 by E. von S. Dingle (ChM 1975.95). The identification of this specimen was confirmed by R.C. Laybourne. Another documented record is a color photograph of a bird captured offshore

from Hilton Head Island on 17 October 1984 by Haney (Chat 50:44). This slide is on file at the Charleston Museum (ChM 1986.46). Leach's Storm-Petrels are occasionally seen off the coast of South Carolina (for example, see Chat 50:44-46). However, ours is the first inland record for either North Carolina or South Carolina.

We thank R.C. Laybourne of the Smithsonian Institution for examining the Leach's Storm-Petrel wing mentioned above.

Hudsonian Godwit Added to South Carolina State List

W. POST

The Charleston Museum
Charleston, S.C. 29403

On November 1985 at 1100, I collected a female Hudsonian Godwit (*Limosa haemastica*) on the east side of the Ashley River in Charleston, Charleston County, S.C. The bird (WP 85-001) was feeding in a shallow puddle on an extensive lawn (ca. 1 ha) adjacent to Brittlebank Park.

The specimen weighed 248.4 g; chord of wing, 208.5 mm; tarsus, 55.0 mm; total length, 360 mm; bill depth, 8.5 mm; total length of culmen, 84.8 mm; culmen from nares, 69.6 mm. Its stomach was empty except for a small amount of grit and mud.

This species was included on the South Carolina State List by Sprunt and Chamberlain (Contr. Charleston Museum XI, 1949), but its inclusion was based only on a 1941 sight record. Since that time, there have been several other sightings, notably a report of a flock of 49 on 1 September 1961 at Hunting Island, Beaufort County (Chat 26:41). This record was apparently not accepted as it was not included in the supplement to *South Carolina Bird Life* (Suppl. to Contr. Charleston Museum XI, 1970). With the publication of the present record, the species may be removed from the hypothetical list.

Documentation of Lesser Black-backed Gull in South Carolina

CHRIS MARSH

Department of Biology
USC-Coastal Carolina College
Conway, S.C. 29526

A subadult Lesser Black-backed Gull (*Larus fuscus*) was discovered on the north beach of Huntington Beach State Park, S.C., on 12 August 1985 by David Milson of Ottawa, Canada, and Julie Finlayson, the park's seasonal naturalist. Milson, who had previous experience with this species in England, recognized the bird immediately and photographed it. The bird's dark mantle and slightly larger size distinguished it from nearby Laughing Gulls (*L. atricilla*) and Ring-billed Gulls (*L. delawarensis*), and the yellowish legs and black-tipped bill were readily visible with 7 x 35 mm binoculars at approximately 50 m.

On 24 August 1985 Frank Spivey and I observed and photographed a Lesser Black-backed Gull at the same location where Milson and Finlayson had found the bird



Fig. 1. Lesser Black-backed Gull, Huntington Beach State Park, S.C., 24 August 1985.
(Photo by C. Marsh)

12 days earlier. The bird was slightly larger than a Ring-billed Gull, but noticeably smaller than a nearby adult Herring Gull (*L. argentatus*). Its small head size relative to its body made its profile more similar to a Ring-billed Gull's than a Herring Gull's. The black-tipped bill, mottled nape, uniformly dark gray mantle, and orangish-yellow legs indicated the bird was in subadult 3-year-old plumage. Its dark gray, rather than black, mantle further suggests that this bird was the British subspecies, *L. f. graellsii*, rather than *L. f. fuscus*, the Scandinavian subspecies (Bruun, Birds of Europe, p. 144).

Lesser Black-backed Gulls have been reported in South Carolina on at least three previous occasions (Chat 44:42, Chat 44:78, Chat 46:89), but this is the first documented sighting. Two of the photographs I took of this bird, along with a duplicate of Milson's photograph, are now on file at the Charleston Museum (ChM 1986.42.1 and 1986.42.2). With the deposition of these photographs at the Charleston Museum, the Lesser Black-backed Gull has now been placed on the official South Carolina State List.

A Specimen of the White Phase of *Ardea herodias* from South Carolina

T. GRAHAM
McClellanville, S.C.

P. MANIGAULT
P.O. Box 853
Charleston, S.C. 29402

W. POST
The Charleston Museum
Charleston, S.C. 29403

A white-phase individual of the Great Blue Heron (*Ardea herodias*) was collected by Post on 22 February 1986 on Minim Creek, Rochelle Plantation, Georgetown County, S.C. This individual was first seen by Graham on 18 February 1986. It stayed in the same locality until it was shot. The bird, a female (ChM 1986.38), was emaciated and weighed

1700 g; ovaries were 10 x 15 mm. The specimen includes color photographs of the fresh soft-parts.

Another documented record of this form was obtained by F. Spivey, on 20 September 1984, when he photographed an individual at Huntington Beach State Park (four Kodachrome slides on file at Charleston Museum; ChM 86.37.1 through 86.37.4). This bird was first seen on 7 August 1984 at the same locality by F. Cobey.

We know of three detailed published records for this population in South Carolina. The first record, documented by a photograph, was on 29 May 1943, near Yemassee, S.C. (Auk 61:150). The second was a detailed note of a bird seen on 17 September 1961 at Hilton Head Island (Chat 25:87-88). The third, a bird seen on upper Lake Marion in extreme southern Sumter County on 29 September 1973 (Chat 39:17), is the only inland occurrence known from the state.

The white phase of the Great Blue Heron breeds in the Florida Keys and the northern Caribbean. Robertson (in Rare and Endangered Biota of Florida, Vol. 2, Birds, H.W. Kale II, editor, 1978) discusses the taxonomic problems surrounding this localized population of *A. herodias*. In brief, it was at one time classified as a separate species (*Ardea occidentalis*), but is now only a color phase (*occidentalis* group of *A. herodias*; A.O.U. Check-list, 1983).

We greatly appreciate the efforts of S. Miller, curator of natural sciences at Clemson University, who prepared the specimen.

Colonial Nesting of Cedar Waxwings in Forsyth County, N.C.: First Record in the Carolinas

RAMONA R. SNAVELY
115 Plymouth Avenue
Winston-Salem, N.C. 27104

ROBERT H. WITHERINGTON
757 Yorkshire Road
Winston-Salem, N.C. 27106

On 20 June 1985, a small flock of Cedar Waxwings (*Bombycilla cedrorum*) was discovered at Tanglewood Park in western Forsyth County, N.C., by Charles Frost, Barbara Page, Ramona Snavely, and Bob Witherington. Chance observation revealed an adult carrying insects. After intensive searching in the immediate area, eight nesting sites were located within a .18-ha (.46-acre) plot.

The colonial nesting area was on a high knoll consisting primarily of pine and oak trees. This knoll is the highest elevation in the Park complex (elevation 260.1 m; 855 feet) and is bordered on three sides by a public golf course. The fourth side is adjacent to parking lots and access roads.

The presence of eight different nesting sites in seven trees within the colony made it difficult to monitor all of the nests simultaneously. Consequently, efforts were concentrated on one nest. This nest was relatively easy to observe and seemed to be in the center of activity. The observations made were representative of all the broods found. Five different broods were located: 2 broods of 5; 1 brood of 3; and 2 broods of 2 each. All five broods fledged within a 48-hour period. The fate of the remaining three broods was not possible to determine because of their inaccessible heights in the trees.

One Shortleaf Pine (*Pinus echinata*) was the focal point of much activity. It was situated at the highest point on the knoll and was rather centrally located among the nesting sites. The tree was used as a congregating point for the flock, and from it parents hawked insects for feeding the young.

The adult birds had a pattern of flying to the "activity tree" and congregating before departing as a group for the food supply to feed the nestlings. Immediately prior to departure, the flock calling became higher pitched and more intense. When the adults returned with food for the young, they again congregated in the "activity tree" before dispersing to their respective nests. Upon hearing the parent birds, the young would immediately peer over the nest rim in a gaping posture. The adults fed the young birds berries, which appeared to be Black Cherry (*Prunus serotina*). The Black Cherry was at the peak of ripeness during the nesting activity.

Waxwings are generally considered a rather non-aggressive bird. Very little territory is required by the species. However, the female will drive intruders away from the immediate vicinity of the nest. There was little, if any, evidence of territoriality within the Tanglewood nesting colony. Fifteen other species of birds were present within the area occupied by the waxwings. Eleven of the 15 species were nesting and fledged young. There was no evidence of nesting by the other four species that were present.

When the waxwing nestlings were approximately 17 days old, they left the nest late in the afternoon, and when last observed all were perched in close proximity to each other on a branch in a Post Oak (*Quercus stellata*). On the morning of the eighteenth day, one fledgling returned to the nest, soon to be followed by the other four. On the afternoon of the same day, the young suddenly "exploded" from the nest and flew about 15 m (50 feet) to the "activity tree," where an adult arrived at the same instant from the opposite direction. The adult fed all five young birds.

The fledglings remained in the nesting area for two additional days. Most often they were seen in the Post Oak, which was the tree closest to the nesting tree. The young left the nesting site with the parent birds and could not be located again.

The Tanglewood Park nesting colony appeared successful in fledging young from at least five broods. This colony constitutes a first documented record of colonial nesting Cedar Waxwings in the Carolinas. Photographs and further details pertaining to the nesting activity are on file at the North Carolina State Museum of Natural Sciences, Raleigh, N.C.

First Record of Bell's Vireo for South Carolina

W. POST
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

D. GREEN
80 Prospect Street
Paramus, N.J. 07652

On 14 October 1985 we caught a Bell's Vireo (*Vireo bellii*) in a mist net at Hog Island ("Patriot's Point"), Mount Pleasant, Charleston County, S.C. The habitat was a large (~ 30 x 50 m) patch of herbaceous vegetation, mainly pigweed (*Amaranthus*) and *Sesbania*, averaging 2 m in height. The capture site is about 150 m from the edge of Charleston Harbor.



Fig. 1. An immature female Bell's Vireo was secured at Mount Pleasant, S.C., on 14 October 1985. This is the first record for the state. (Photo by William Post)

This individual, an immature female (Fig. 1), was collected (WP 85.002). The skull was not fully ossified; the weight was 9.1 g; wing chord 55.0 mm; total length 108.0 mm; tarsus length 19.8 mm. The base of the mandible was light russet vinaceous, base of maxilla was maroon, and tarsi were plumbeous.

This is the first substantiated record of *V. bellii* in the Carolinas. One North Carolina sight record has been published (Chat 39:92-93). The Bell's Vireo breeds chiefly from the southwestern United States and northern Mexico eastward across the central United States to central Indiana and southwest Ohio. A few substantiated records have been published for New York (Kingbird 20:57-60; Birds of New York State, 1974, p. 456) and New Jersey (Wilson Bull. 72:404). The only Georgia record appears to be that of two individuals at Columbus on 3 and 24 August 1975 (Amer. Birds 30:53), but no details of this report have been published through 1985. In addition to this Georgia record, there are numerous records for the species from southern Florida, mainly during fall migration. These and other sight records are questionable, because this species is notably difficult to separate from the White-eyed Vireo (*Vireo griseus*).

First Inland Record of Pomarine Jaeger from the Carolinas: A Correction

W. POST

The Charleston Museum
Charleston, S.C. 29403

Hendrickson and Allen (Chat 49:41-42) published a note concerning the occurrence of three Pomarine Jaegers (*Stercorarius pomarinus*) seen near Greensboro, N.C. This otherwise excellent note is in error in stating that these sightings constituted the first inland records for the Carolinas. The first bird found in the interior of the Carolinas was a male (ChM 1950.164) taken on 30 October 1950 on Lake Moultrie, about 1.7 km north of Pinopolis, Berkeley County. This site is about 60 km from the coast. The record was published (Auk 68:377; Suppl. South Carolina Bird Life, pages 602-603, 1970).

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1985)

RED-THROATED LOON: A first record for Forsyth County, N.C., was one that landed on a road during a fog; it was caught, banded, and released at Salem Lake on 19 November by Ramona Snavey and party. One was also observed by Ricky Davis at Jordan Lake in Chatham County, N.C., on 28 November.

COMMON LOON: A fallout of migrants at Falls Lake, Durham County, N.C., yielded 70 loons on 16 November (Harry LeGrand, Tom Howard). Douglas McNair had two early loons from 12 to 14 August at Lake Keowee, S.C.

NORTHERN FULMAR: An excellent fall count of 20+ was seen by Dave Lee off Oregon Inlet, N.C., on 25 October; at least five were gray-phase birds. Most unusual was one found alive and photographed (see front cover) by David Chamberlain on the beach at Buxton, N.C., on 4 November following Hurricane Juan.

BLACK-CAPPED PETREL: Dennis Forsythe saw one on 24 October about 60 miles off Charleston, S.C. The species was commonly seen on most pelagic trips off Oregon and Hatteras Inlets, N.C., during the fall (fide Dave Lee).

GREATER SHEARWATER: David Chamberlain observed one from shore at Buxton, N.C., on 4 November. An excellent pelagic count was 362 noted by Dave Lee off Oregon Inlet on 8 August; he also tallied 1252 Cory's and 1209 Audubon's Shearwaters on this trip.

WHITE-FACED STORM-PETREL: On pelagic trips off Oregon Inlet, four were seen on 29 August, one was seen on 23 August, and another was seen on 27 August (Dave Lee et al.).

LEACH'S STORM-PETREL: Remarkable counts for this species, considered a rare bird in North Carolina waters only a few years ago, were 133 on 24 August and 75 on 29 August, both noted by Dave Lee and party off Oregon Inlet.

BAND-RUMPED STORM-PETREL: This species was seen on most pelagic trips taken off Hatteras and Oregon Inlets in August and early September; peak counts (fide Dave Lee) were 64 on 24 August and 47 on the following day, both off Oregon Inlet.

WHITE-TAILED TROPICBIRD: Four were seen off Oregon Inlet on 6 August, and another was seen in that area on 8 August (fide Dave Lee). Off Hatteras Inlet, an adult was photographed by Larry Rosche on 10 August [photos seen by the editor—HEL], and one was seen by Robert

Ake, Paul DuMont, and party on 2 September.

AMERICAN WHITE PELICAN: An excellent count for the Carolinas was nine pelicans seen on several dates from 5 to 16 November near the Santee River, S.C., delta (H.L. Holbrook et al.).

GREAT CORMORANT: Extremely early was an immature seen by Clyde Adkins at Huntington Beach State Park, S.C., on 16 August. Dennis Forsythe also saw immatures in that state at Charleston on 20 October and at nearby Sullivans Island on 16 November.

DOUBLE-CRESTED CORMORANT: Jim Mulholland had a flock of 84 in flight over Lake Wheeler, south of Raleigh, N.C., on 29 November.

ANHINGA: One was rare at Gale Creek near Mesic, Pamlico County, N.C., on 19 October (Philip Crutchfield, Morris Whitfield).

MAGNIFICENT FRIGATEBIRD: Very late was one seen circling overhead at North Myrtle Beach, S.C., on 1 November by Rick Murray.

AMERICAN BITTERN: Ron Warner reported one in the mountains at Bo Thomas Swamp in Hendersonville, N.C., on 25 October.

REDDISH EGRET: For the second consecutive summer, an immature was seen at Huntington Beach State Park, S.C. It was noted from 14 to 16 August by Paul Lehman, Henry Fuseler, and Clyde Adkins.

WHITE IBIS: Seldom seen between Pea Island and Beaufort, N.C., was one noted at Portsmouth village on 16 September by John Fussell.

GLOSSY IBIS: Always notable in the piedmont, one was seen at Falls Lake in Durham County on 7 November by Jim McConnell and Mike Schultz.

ROSEATE SPOONBILL: Bill Brokaw saw an immature in fall (no date given) flying over Long Beach, for a very rare North Carolina report.

WOOD STORK: Quite far north was one seen at Bodie Island, N.C., on 4 and 5 September (Jerry Via party), as was one in flight over the Wateree River in Kershaw County, S.C., on 17 August (Charlie Wooten).

FULVOUS WHISTLING-DUCK: One observed by Jim McConnell and Mike Schultz at Falls Lake on 7 November was extremely rare for the piedmont. Among several reports for coastal South Carolina, the highest total was of 30+ at Huntington Beach State Park on 30 November (Herb Hendrickson).

NORTHERN SHOVELER: Rare in the mountains were two at Lake Osceola in Hendersonville, N.C., on 28 October (Ron Warner).

EURASIAN WIGEON: A male was seen from 10 to 17 November by Haven Wiley and others at Lake Mattamuskeet, N.C., and three males were seen by Jan DeBlieu (fide Derb Carter) at Pea Island, N.C., on 23 November.

REDHEAD: Notable records for the western Carolinas were at least four at Lake Julian, Buncombe County, N.C., on 22 November (Ron Warner); one at Cashiers, N.C., from 23 to 28 November (Douglas McNair); and an excellent count of 283 on Lake Keowee, S.C., on 25 November (McNair).

RING-NECKED DUCK: Douglas McNair observed 214 at Cashiers, N.C., on 8 November, and he saw 18 early ducks at Lake Keowee on 25 September.

COMMON EIDER: A female was rare and very early for South Carolina at Huntington Beach State Park on 27 October, as noted by Charlie Wooten, Steve Wagner, and party.

BLACK SCOTER: A good count of 3000 was made by Douglas McNair at Edisto Island, S.C., on 16 November.

SURF SCOTER: Harry LeGrand observed a female at Jordan Lake, N.C., on 17 November.

RED-BREASTED MERGANSER: A remarkable inland total of 925 migrants, in five flocks, were seen at Lake Keowee on 25 November by Douglas McNair.

TURKEY VULTURE: An unusually large roost of 165 birds was found by Douglas McNair at the Brevard Fish Hatchery in Transylvania County, N.C., on 24 September.

BLACK VULTURE: At a high elevation for the Carolinas was one seen at 3500 feet along the Blue

Ridge Parkway near Doughton Park, N.C., on 8 September (Allen Bryan, Ricky Davis, Harry LeGrand).

OSPREY: A good one-day count of migrants was 94 at Huntington Beach State Park on 13 October (Douglas McNair).

AMERICAN SWALLOW-TAILED KITE: Seldom found in the piedmont was one seen by Bill Scott about 7.5 miles N of Monroe, N.C., on 9 August.

BALD EAGLE: Excellent numbers of summering eagles were present at Jordan and Falls Lakes in central North Carolina. On 24 August, censuses of these lakes yielded 30 at Jordan and 14 at Falls (Melinda Welton, Kathy Kuyper, and others).

GOLDEN EAGLE: Perry Nugent and Charlie Walters observed an immature at Bluff Plantation near Charleston on 9 November.

MERLIN: Inland sightings for the fall were of single birds at Falls Lake on 3 November (Ricky Davis) and at Albemarle Sound in northern Washington County, N.C., on 27 September (Allen Bryan et al.).

PEREGRINE FALCON: Kitty Kosh saw two near Leland in Brunswick County, N.C., on 5 October. Seldom is more than one falcon seen per day away from the immediate coast.

YELLOW RAIL: One was flushed twice by John Fussell near Atlantic Beach, N.C., on 14 October.

BLACK RAIL: Perry Nugent and Charlie Walters flushed two from a dike at Magnolia Gardens near Charleston on 23 November.

BLACK-BELLIED PLOVER: One was quite late inland near Morrisville, Wake County, N.C., on 16 November (Jim and Elizabeth Pullman). A large flock of 24, plus a Lesser Golden-Plover, was seen by Harry LeGrand at Falls Lake on 17 August.

LESSER GOLDEN-PLOVER: There was a poor flight of this species in the Carolinas in fall 1985. The only coastal reports, all in North Carolina, were three at Portsmouth Island on 16 September (John Fussell), two at Pea Island on 23 September (Derb Carter), one at Bald Head Island on 27 September (Carter), and one late at Cape Hatteras point on 23 November (Carter).

WILLET: One was notable at Falls Lake on 8 August, as seen by Ricky Davis.

UPLAND SANDPIPER: Inland sightings, where rare in fall, were of one at Falls Lake on 10 August (Harry LeGrand, Ricky Davis) and 10 at Shaw Air Force Base near Sumter, S.C., on 2 August (Ramona Snively, Evelyn Dabbs).

LONG-BILLED CURLEW: Two were observed by John Fussell and Henry Haberyan at Ocracoke, N.C., on 22 September. One bird, perhaps one of those at Ocracoke, was seen at Portsmouth Island, N.C., on 13 September (Fussell); and another was seen by Douglas McNair on St. Helena Island, S.C., on 17 November.

HUDSONIAN GODWIT: The best count at Bodie-Pea Islands, N.C., for the fall was 12 seen after Hurricane Juan on 5 November (David Chamberlain). Seldom seen away from the above area was one at Bogue Inlet, N.C., on 28 October (Jim and Elizabeth Pullman).

MARBLED GODWIT: Just the second ever inland for North Carolina was one seen by David Wright, Heathy Walker, and Harriet Whitsett at Falls Lake in Durham County on 16 August.

RUDDY TURNSTONE: Scarce inland were two near Townville, S.C., on 2 October (Charlie Wooten) and one at Pineville, N.C., on 18 August (Heathy Walker). Douglas McNair had an excellent coastal count of 1100 at Sullivans Island, S.C., on 15 November.

RED KNOT: A first record for Forsyth County, N.C., was of two birds at a sewage treatment plant at Winston-Salem, 9 to 11 August (Jim and Pat Culbertson, Charles Frost, Ramona Snively).

SANDERLING: One was noteworthy at Winston-Salem from 1 to 3 September, as seen by Ramona Snively and party.

WHITE-RUMPED SANDPIPER: The only inland record for the fall was one seen by Ricky Davis at Falls Lake on 3 August.

BAIRD'S SANDPIPER: There were three reports for the season: two on 14 August at a sewage treatment plant near Sumter (Evelyn Dabbs, Jimmy Beatty, Lex Glover), one at Clemson on 7 August (Charlie Wooten), and one at Hatteras Inlet, N.C., on 31 August (Greg Massey,

Maurice Barnhill, and others).

PECTORAL SANDPIPER: Good inland totals were 100+ seen by Harry LeGrand at Falls Lake on 10 and 16 August and 75 at Lake Hartwell near Clemson on 7 October by Charlie Wooten.

STILT SANDPIPER: Small numbers were found well inland during the fall at Lake Hartwell (Charlie Wooten et al.), near Goldsboro, N.C. (Ricky Davis et al.), and near Pineville, N.C. (David Wright, Heathy Walker). An excellent total of 40 were seen by Ricky Davis and Harry LeGrand at Falls Lake on 10 August.

RUFF: Only the second ever seen in inland North Carolina, the first this century, was one with remnants of breeding plumage at Falls Lake in Durham County on 14 and 15 August. Ricky Davis first found the bird, and it was seen by approximately 10 other birders. Another was seen at the southern end of Ocracoke Island, N.C., on 22 July by David Sibley.

SHORT-BILLED DOWITCHER: A notable inland total of 30 were seen by Ricky Davis and Harry LeGrand at Falls Lake on 10 August.

LONG-BILLED DOWITCHER: Charlie Wooten saw and heard two near Townville, S.C., on 24 October, and two differently plumaged birds were there from 30 October to 2 November.

WILSON'S PHALAROPE: One was notable at a sewage treatment plant in Winston-Salem from 1 to 3 September (Ramona and Alan Snavelly, Barbara Page). In addition to a few sightings on the North Carolina Outer Banks, one was seen at Eagle Island near Wilmington on 17 and 29 August (Jeremy Nance, Kitty Kosh).

POMARINE JAEGER: A record count of 90 was seen by Dave Lee off Oregon Inlet on 25 October. John Fussell saw another from the Cedar Island to Ocracoke, N.C., ferry on 25 November.

PARASITIC JAEGER: Dave Lee had at least 20 on a pelagic trip off Oregon Inlet on 25 October. The best of several other coastal reports was two seen from the Cedar Island to Ocracoke ferry on 10 November by Henry Haberyan.

LESSER BLACK-BACKED GULL: Very early was an adult seen by Henry Haberyan at Bogue Inlet, N.C., on 8 September. Rather far inland was an adult seen at Goose Creek State Park, N.C., along the Pamlico River, on 17 November by Veronica Pantelidis.

BLACK-LEGGED KITTIWAKE: Dennis Forsythe photographed an immature off Charleston on 17 November.

CASPIAN TERN: An outstanding count of 170 was made by Douglas McNair at Huntington Beach State Park on 13 October.

ROSEATE TERN: An adult in winter plumage was studied in flight at Fort Fisher, N.C., on 27 September by Sam Cooper. [A detailed description and sketch were provided.—HEL]

ARCTIC TERN: Ned Brinkley submitted a thorough description of one in breeding plumage seen at rest with Common Terns at Cape Hatteras point, N.C., on 21 August. This appears to be the first record for the species seen on land (and not offshore) in the state.

SOOTY TERN: Walker Golder found a nest, with one egg (the normal clutch size), on 30 May at Cape Hatteras point. The nest was abandoned after 3 days. This is the third location in North Carolina for attempted breeding by the species; no nest has yet been successful.

BLACK TERN: A good recent inland count of 11 was made by Ricky Davis at Jordan Lake on 25 August. This tern has declined dramatically as a fall migrant in our area over the last decade or two.

COMMON BARN-OWL: Surprisingly, the first ever record for the North Carolina Sandhills was one seen on 26 October at Normandy Drop Zone at Fort Bragg (fide Jay Carter).

OLIVE-SIDED FLYCATCHER: Single rare migrants were observed at Pea Island on 18 August (Wayne Irvin) and at Fayetteville on 26 August (Philip Crutchfield).

YELLOW-BELLIED FLYCATCHER: Individuals were studied at Pea Island on 24 August by Wayne Irvin and 25 August by Ned Brinkley, near Fayetteville on 26 August by Philip Crutchfield, and near Pendleton, S.C., on 15 September by Charlie Wooten. Will Post collected birds for the Charleston Museum on 17 and 23 September at Mount Pleasant, S.C.

- ALDER FLYCATCHER:** Charlie Wooten observed one, giving the diagnostic "pip" call note, near Townville on 20 September.
- LEAST FLYCATCHER:** One was netted by Will Post at Mount Pleasant on 19 October.
- WESTERN KINGBIRD:** Though somewhat regular along the coast from September through November, one was early on 25 August at Pea Island (Ned Brinkley).
- SCISSOR-TAILED FLYCATCHER:** One was photographed by Ric Carter on 29 October near Bath, N.C.
- TREE SWALLOW:** A good coastal total was an estimated 30,000 on 8 November at Emerald Isle, N.C. (John Fussell, Henry Haberyan). A notable total inland in fall was 200 at Jordan Lake on 5 November (Bill and Margaret Wagner).
- NORTHERN ROUGH-WINGED SWALLOW:** Douglas McNair observed three very late individuals on 12 October at Lake Wallace near Bennettsville, S.C.
- CEDAR WAXWING:** Six were seen by Jim Pullman on 30 June at Falls Lake, where waxwings have been noted sparingly during summer in several recent years.
- YELLOW-THROATED VIREO:** Very seldom seen in the Carolinas after October, one was found dead at a TV tower near Awendaw, Charleston County, S.C., on 4 November (Will Post).
- PHILADELPHIA VIREO:** Individuals were seen along the coast at Bald Head Island on 28 September (Derb Carter) and at Fort Fisher, N.C., on 6 October (Jeremy Nance, John Hardwick). Among the handful of inland reports was an excellent one-party count of five, near Pilot Mountain State Park, N.C., on 29 September (Allen Bryan, Ricky Davis, Harry LeGrand).
- TV TOWER KILL:** Dave Lee found about 500 birds killed at a TV tower near Singletary Lake in Bladen County, N.C., during the night of 26-27 September. Noteworthy species included a Philadelphia Vireo and a Blackburnian Warbler, plus a high total of 20 Magnolia Warblers.
- GOLDEN-WINGED WARBLER:** Individuals were reported from 23 August to 28 September near Wrightsville Beach (Greg Massey), Wilmington (Kitty Kosh, Jeremy Nance), Raleigh (Jim Mulholland), Chapel Hill (Johnnie Payne), and Crowders Mountain State Park (Paul Hart) in North Carolina, and near Clemson (Charlie Wooten) in South Carolina.
- BREWSTER'S WARBLER:** This hybrid was seen by Philip Crutchfield at Fayetteville on 9 September.
- NASHVILLE WARBLER:** A first fall specimen for the South Carolina coast was collected by Will Post at Mount Pleasant on 29 October. Ricky Davis saw one at Pea Island on 6 October, the only other coastal report for the fall season.
- CERULEAN WARBLER:** Ricky Davis observed one on the exceptionally late date of 13 October at Buxton; the species is seldom reported from the coast at any season. Charlie Wooten found singles at Clemson on 10, 15, and 20 August while making a special search for the species during the apparent "peak" of its migration through the Carolinas.
- CONNECTICUT WARBLER:** The only fall sightings were, as usual, along the North Carolina Outer Banks. Individuals were seen in Buxton Woods on 28 September by Wayne Irvin and on 12 October by Ricky Davis and Harry LeGrand.
- WILSON'S WARBLER:** A surprising number were seen near the coast this fall. Individuals near the North Carolina coast were noted on 1 September near Wilmington (Jeremy Nance), on 14 September at Fort Fisher (Greg Massey), on 28 September at Emerald Isle (John Fussell, Robert Hader) and Bald Head Island (Derb Carter), and 29 September at New Bern (Bob Holmes). One was along the South Carolina coast at Huntington Beach State Park on 26 October (Charlie Wooten, Steve Wagner).
- CANADA WARBLER:** An adult male was very late on 6 November, as seen by Dorothy Foy at Oriental, N.C.
- YELLOW-BREASTED CHAT:** John Fussell noted one on 13 November in his yard in Morehead City, N.C. This species occasionally overwinters in such locations.

- SUMMER TANAGER:** A migrant was at a fairly high elevation of 3500 feet at Doughton Park, along the Blue Ridge Parkway, N.C., on 8 September (Allen Bryan, Ricky Davis, Harry LeGrand).
- WESTERN TANAGER:** A rare sighting was one noted by Dorothy Foy on 7 and 8 September at Oriental, N.C.
- ROSE-BREASTED GROSBEAK:** Quite late was an immature male at the feeder of Frances and Henry Rankin Jr. in Fayetteville from 25 to 27 November.
- PAINTED BUNTING:** Will Post netted a late bunting at his banding station at Mount Pleasant on 16 November.
- DICKCISSEL:** A good count of migrants was three seen and heard calling at Pea Island on 6 October (Harry LeGrand, Ricky Davis, et al.).
- CLAY-COLORED SPARROW:** One was found by Derb Carter at Bald Head Island on 29 September; two were seen by Harry LeGrand, Ricky Davis, and others at Pea Island on 6 October; and one was collected by Will Post on 25 September at Mount Pleasant.
- LARK SPARROW:** Individuals were reported only from the coast, where the species is regular in fall: Pea Island on two occasions, Huntington Beach State Park, and Hilton Head Island.
- GRASSHOPPER SPARROW:** Will Post netted five along the coast at Mount Pleasant from 28 September to 26 October.
- LE CONTE'S SPARROW:** One, perhaps on its wintering grounds, was seen at Mount Pleasant on 13 November by Jeannine Angerman and the following day by Steve Compton.
- LINCOLN'S SPARROW:** In North Carolina, the only reports for the fall were of individuals at Pea Island on 6 October (Brainard Palmer-Ball) and near Wilson on 9 November (Ricky Davis). In South Carolina, Will Post netted two at Mount Pleasant on 6 October and another on 27 October; Charlie Wooten and others saw about 18 birds during the fall in the Townville area. This species is certainly not rare in many areas of the Carolinas in fall, particularly the mountains and western piedmont.
- LAPLAND LONGSPUR:** Seldom seen along the South Carolina coast was one studied by Mike Cooper on 13 November at Hilton Head Island.
- BOBOLINK:** An outstanding total was approximately 8000 migrants seen flying north during the morning across Oregon Inlet on 28 September by Wayne Irvin. [These birds, and other passerine migrants, seen flying north along the Outer Banks on autumn mornings are apparently correcting for wind drift that occurred during the previous night's southbound migration. Such morning flights, generally oriented to the northwest, are most prevalent on the first day after passage of a cold front.—HEL]
- YELLOW-HEADED BLACKBIRD:** The best place to see this species in the Carolinas is the Outer Banks in late August or early September. Continuing the sightings of previous years were individuals in mid-August near Buxton (Larry Rosche), at Hatteras Inlet on 31 August (Greg Massey, Maurice Barnhill, et al.), and at Pea Island on 5 September (Bill Akers, Jerry Via, Fenton Day).
- BREWER'S BLACKBIRD:** The only area in the Carolinas where the species is found consistently is Townville, S.C.; Charlie Wooten and Sidney Gauthreaux saw two males here on 20 November and one on 24 November.
- HOUSE FINCH:** Douglas McNair noted three at Cashiers, N.C., on 23 November.
- RED CROSSBILL:** Thought seen at several places in the North Carolina mountains during the fall, the only sighting away from the mountains was one seen and heard in flight by Ricky Davis at Wilson, N.C., on 9 November.
- PINE SISKIN:** A very good count of 325 was made by Douglas McNair at Cashiers on 27 October.
- EVENING GROSBEAK:** A modest movement of grosbeaks and siskins occurred this fall in the Carolinas. Unusually early were two grosbeaks at a feeder in Winston-Salem on 27 September (Barbara and Dick Page) and one at Nags Head on 12 October (Harry LeGrand, Ricky Davis).

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Charter Member Profile: Flossie Martin

At age 96, Flossie Martin is still actively engaged in researching and preserving the history of Davie County, N.C., particularly the history of its Baptist churches. Though troubled by arthritis, she frequently visits the local history room at the Davie County Library in Mocksville, N.C.

A native of Davie County, Miss Martin graduated from Salem College, received a B.S. degree from Columbia University, and earned her M.A. at the University of North Carolina at Chapel Hill. She taught science courses at R.J. Reynolds High School in Winston-Salem from 1921 to 1947, when she moved “back home” to Mocksville, where she lives in a house built by her physician father about the turn of the century. She taught science at Mocksville High School and then at the consolidated Davie County High School until her retirement at age 70 in 1960. Former students recall Miss Martin with great respect; she was “tough as nails” but always fair. Those who went on to college found that she had given them an excellent background in science and helped them form good study habits.

Miss Flossie's interest in history was enhanced by her long friendship with Adelaide Fries, author of *Road to Salem*. She and Dr. Fries used to go "graveyarding" and "courthousing" together. When Miss Flossie retired from teaching, she devoted her spare time, energy, and intellect to genealogy and local history. Approximately 85% of the materials now in the Davie County History Room were garnered by Flossie Martin. Photographs of Miss Martin and further information about her contributions to the community can be found in the *Davie County Enterprise-Record* Sesquicentennial Edition, 23 October 1986, and *The Forsyth-Davie Ledger*, 29 October 1986.—TERRY S. DUNN, P.O. Box 531, Mocksville, N.C. 27028

[illegible]



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General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, 100 Clyde Morris Blvd., No. 155 Ormond Beach, Fla. 32074
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—A Lesser Black-backed Gull in second-winter plumage was photographed by Heinz (Henry) Haberyan on 11 January 1986 at the landfill site in Carteret County, N.C.

The Washington Field Museum

ELIZABETH YERT STERLING and MARY SHELBURNE McLaurin

The Bug House Laboratory, which later became known as the Washington Field Museum, was started in the summer of 1923 by four barefoot boys who were almost 14 years old—George Ross, John Ratcliff, James Braddy, and Dick Dunston. They formed a club so they could share the fun of collecting, studying, and mounting specimens of insects, reptiles, amphibians, and mammals. Their first laboratory was a burlap tent in one boy's back yard at Washington, Beaufort County, N.C.

When their collections outgrew the tent, the boys obtained permission to use an old, detached kitchen in a different back yard. It was here that the club received its name (Sterling 1985). A young lady who came to view the collections asked, "What is this, a bug house?" After she left, the boys decided this was a fine name and adopted it immediately. The Bug House Laboratory quickly outgrew the kitchen and, after a brief stay in a large, hard-to-heat building on Fifth Street, moved across the street into a two-room wooden structure adjacent to the campus of the John H. Small School. Within three years the collections had outgrown this place, and the young people began looking for larger quarters. In December 1929 the museum moved into rooms above the City Hall. Here it was open to the public at regular hours.

The Bug House members, some by then in their early 20s, took their work seriously. They drew up a constitution, elected officers, kept minutes, kept accessions records, obtained state and federal collecting permits, learned taxidermy, cared for the living animals they had on display, and accepted donations to pay for cabinets and other necessities. The way they assumed responsibility won the respect of adults in Washington and all across the country. Their knowledge of wildlife became an asset to the community. At least once, Bug House members were called to the local hospital to identify a poisonous snake that had bitten someone (Sterling 1985).

Membership in the Bug House had to be earned through service to the museum. No girls were accepted as active members until November 1933 (Sterling 1985). Between 30 and 40 people were at one time associate, junior, or full members. Young people in Washington, N.C., thirsty for knowledge and inspired by the group's determination, worked together to build and improve their museum. George Ross, one of the original four, was a human dynamo and kept things moving forward. B.B. Brandt, a high-school science teacher, was an inspiration and helped with scientific problems too difficult for the boys and girls to handle (Sterling and McLaurin 1976).

As the membership grew and the collections were viewed by visitors from distant cities, the Bug House name no longer seemed appropriate. The group decided the place where the collections were housed should be known as the Washington Field Museum, which was sponsored by the Bug House Laboratory. The Washington Field Museum became the largest amateur museum in the United States and was accepted as a member of the American Association of Museums in 1931.

Publicity in the state and national press attracted great attention to the museum founded and operated by young people. Several museums and many private citizens donated valuable items, artifacts of human history as well as fossils and zoological speci-

mens, to the Washington Field Museum. The Bug House members founded a newsletter called "The Reporter." It was published quarterly, beginning in October 1931, to give the public information on the activities of the museum, the donations received, and news in general. Blake Lewis, H.E. Yert, and Elizabeth Yert were its editors (Sterling 1985).

When WPA help became available, the city suggested construction of a museum building on city property situated on Jack's Creek. Money had to be raised. Members sold tags on Tag Day. A model of the proposed building was built with names of people who donated to this cause printed on the logs and roof. Special field trips were held to collect frogs to sell to Duke University for use in laboratory work. Frog legs were shipped to the House Restaurant in Washington, D.C., whenever enough were collected. A musical called "The Dixie Blackbirds" was sponsored, which proved profitable. Enough money was finally raised, and the log structure was built with WPA assistance (Sterling and McLaurin 1976).

It was a gigantic task to set up the new exhibits and organize the museum in an interesting and attractive manner. Parents helped, and there was no generation gap here; everyone worked to achieve the desired effect (Sterling and McLaurin 1976). Fish ponds were constructed, brick walks laid in the park, cages built for animals, and trees planted. The grand opening was on 12 November 1934. City dignitaries were invited, a banquet was held in the hall of the new building, and one of the speakers for the occasion was H.H. Brimley, director of the State Museum at Raleigh and a contributing or member for several years (Sterling 1985).

Among the other distinguished scientists who took an interest in the Washington Field Museum were Alexander Wetmore and W.M. Perrygo of the National Museum of Natural History in Washington, D.C.; Robert Cushman Murphy, curator of oceanic birds at the American Museum of Natural History and president of the American Association of Audubon Societies; William Vogt, editor of *Bird-Lore*; R.E. Coker, professor of zoology at the University of North Carolina at Chapel Hill; and C.S. Brimley, state entomologist. Roxie Collie Simpson, then of the North Carolina State Museum, spent two days at the Washington Field Museum helping the Bug House members lay the paper mache body for a model of an 8-foot Southern Ground Shark (*Carcharhinus commersonii*).

Thousands of people came to tour the museum and enjoy the surrounding park. Members of visiting scout troops sometimes stayed in the homes of Bug House boys and girls (William Craven, pers. comm.). Cages held various native animals, including the famous pair of Great Horned Owls. The museum had, at one time, North Carolina's largest collection of living reptiles, numbering 412 specimens. This remarkable assemblage was largely the work of Churchill Bragaw.

The Bug House boys and girls enjoyed showing their collections at the county fair and participating in parades and festivals. When Washington celebrated the Tulip Festival, the young people bordered the creek with huge candles in glass jars set on posts. These were lighted at night, making the park a fairyland to be enjoyed by all. A windmill was erected on rocks in the center of the creek, carrying out the Dutch theme. This was appropriate because the original name of Jack's Creek was Windmill Creek (Sterling and McLaurin 1976).

Reports from the Washington Field Museum quickly found their way into the pages of *The Chat*. "Some Nests and Eggs of the Loggerhead Shrike" (Anon. 1937) from the Spring 1935 issue of "The Reporter" was reprinted in the third issue of the newly founded bulletin. Three Bug House participants were among the charter members of the North Carolina Bird

Club—Joseph D. Biggs Jr., Churchill Bragaw, and Mary Shelburne. These three compiled an annotated list of the birds of Washington, N.C. (Biggs et al. 1939). They reported faithfully on the bird life of Beaufort County and other places they visited (Biggs 1937, 1938b, 1938c, 1938d, 1939; Bragaw 1938; Shelburne et al. 1938). Biggs (1938a, 1938e, 1940) also took Christmas Bird Counts alone and on foot. Mary Shelburne (1938a) reported an instance of cannibalism in the Red-headed Woodpecker and what appears to have been the first recorded breeding of Great Horned Owls in captivity (Shelburne 1938b). The hatching of the owlet was publicized nationwide by the Associated Press (Sterling 1985). Sally Bogart (1940) made the last report on the Bug House that appeared in *The Chat*.

Perhaps the most significant contribution of the Bug House members was the discovery of a species new to science. The Brimley's Chorus Frog (*Pseudacris brimleyi*) was named in honor of C.S. Brimley (Sterling 1985). Its discovery was a result of the numerous frogging expeditions made under the guidance of Dr. Brandt. Altogether, the young people identified 22 species of frogs in Beaufort County.

When World War II began, the men of the organization were called to arms and the Washington Field Museum had to close its doors. During the war the city moved the entire contents of the museum into storage and used the cabin as a USO center. After the war, the Bug House Laboratory gave the collections to the City of Washington to be used to the best advantage of the public (Sterling and McLaurin 1976). The city disposed of all the materials that had been so lovingly and painstakingly collected and classified. The log, building, once a source of community pride, was allowed to fall into disrepair. In 1981 the cabin was bulldozed to prepare the site for tennis courts (Sterling 1985).

Although the Washington Field Museum is gone and the sponsors are now in their 60s or 70s, the Bug House Laboratory never officially disbanded (Rogers 1986). The fellowship of youthful experience still binds these friends together.

In his *News and Observer* column of 23 January 1986, Dennis Rogers interviewed Elizabeth Yert Sterling, who compiled the *History of the Bug House Laboratory*. Edited by Cynthia Obrist, this book is a record of what small-town kids did on their own during the two decades prior to World War II. As Mrs. Sterling told Rogers, "It was a very special time and place."

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718 E. Main Street, Washington, N.C., and Route 1, Box 20, Bath, N.C. 27808

About the Authors. The Bug House fostered at least one romance. Elizabeth Yert, editor of "The Reporter," married Hugh Martin Sterling, a vice-president of the group. Both Elizabeth and Hugh have been active members of Carolina Bird Club for many years. Mary Shelburne, a director of the Washington Field Museum and a charter member of the North Carolina Bird Club, married James L. McLaurin, who shares her interest in the birds.

Cooperation

U.S. News and World Report says that an Ivory-billed Woodpecker has been seen 500 miles east of Havana, Cuba, and confirmed by Lester Short, author of *Woodpeckers of the World*. Cuba suspended logging and seems anxious to cooperate in saving the bird.

New Refuges

Mary and Maud Adams have given 628 acres of forest and lakes near Sioux City, Iowa, to the State for a nature preserve. The sisters will live on the property, which abounds in cormorants, pelicans and other birds, for their life-time. The world's first preserve for shore birds has been established in Delaware and New Jersey on both sides of Delaware Bay. It is said that 1 million birds of 20 species stop in the area every spring.

Big Money

The New York Times says that birding now attracts 21 million Americans and is second only to gardening as a hobby. "There are incredible bucks in bird feeders," said one retailer. Enthusiasm runs high. *Bird Watcher's Digest* started 8 years ago with 2,000 subscribers and now has 55,000. At Jamaica Bay Refuge, scores of watchers are on hand every day before 0700. Now *Birder's World* is offering its charter issue. Roger Peterson's field guide has sold 3 million copies, and 140,000 more are sold each year. Seven hundred people have taken Cornell University's course in bird biology at \$140.

Harry Towles Davis

ELOISE F. POTTER

Harry Towles Davis, a geologist, was second director of the North Carolina State Museum (1937-1966) and a founder of the North Carolina Bird Club, which is now Carolina Bird Club, Inc. He served CBC as president (1962-1964) and editor of the Newsletter.

A native of Buxton, N.C., Mr. Davis was born 7 July 1896, one of 12 children in the family of Dr. and Mrs. J.J. Davis (John 1972). As the first physician to serve the Cape Hatteras community, Dr. Davis was concerned about the early education of all the children, not just his own. He solved the problem by building a one-room school house and hiring a teacher from the mainland to hold classes 8 months of the year. When not in school, the youngsters explored the plant and animal life of the region. Young Harry Davis grew up loving to hunt and fish.

The children's education was greatly enhanced by the many interesting visitors who stayed with the Davis family while conducting scientific studies on the isolated Outer Banks (John 1972). These included Fessenden, Thiessen, and DeForest, the pioneers in radio; T.K. Bruner, secretary of the N.C. Board of Agriculture; H.H. Brimley, curator of the State Museum; and Collier Cobb, a professor of geology at the University of North Carolina at Chapel Hill, who went to Hatteras to study the sand dunes. According to family tradition, Thomas A. Edison was also a guest in the home, but Harry Davis had no personal recollection of the great inventor. It is likely that Edison visited Hatteras because Reginald L. Fessenden, who had served as his chief chemist, conducted experiments with wireless telegraphy on the North Carolina coast, beginning in 1901. One of the two 50-foot towers was at Hatteras (Stick 1958).

When Harry and his siblings reached high-school age, the Davis family moved to the mainland so the children could continue their education (John 1972). Dr. Davis bought a farm near Beaufort, on the Newport River. During the summer, the Davis boys cleared and tilled the farm. They also sailed the family's schooner *Maggie*, a 55-foot boat that helped to supplement the doctor's income. The boys used the boat to carry melons and potatoes to the market at Norfolk, and they had a contract to deliver wood to Coast Guard Stations. Later some of Harry's brothers joined the U.S. Navy, and two of them retired with the rank of rear admiral.

In 1915 Davis was old enough to enter college, but he still lacked a year or so of finishing his studies at the high school in Beaufort (John 1972). Nonetheless, he entered the University at Chapel Hill. During his first year, which was devoted to liberal arts courses, he quickly worked off his conditions in Latin and mathematics. Because he did better in English than in his other courses, he decided to pursue a career in journalism. However, before the beginning of his third year, he knew that he definitely wanted to study geology and therefore renewed his acquaintance with Professor Cobb. He was a laboratory assistant during his senior year and graduated in 1919 with an A.B. in geology. He served as a geology instructor at Carolina for the 1919-1920 school year and received his M.A. degree in 1920.

While Davis was seriously considering the offer of a job as a petroleum geologist in Oklahoma, his friend W.W. Eagle resigned from the staff of the State Museum to study

medicine (John 1972). On 1 July 1920, Harry Davis became assistant curator, working under his father's old friend, H.H. Brimley. Davis later became assistant director and curator of geology. Following Brimley's retirement in 1937, Davis was named director of the museum.

Near the museum in downtown Raleigh there was a hat shop operated by the Phillips sisters. Roberta, whom he called Bert, married Harry Davis, and for many years Bert's widowed sister, Carrie Phillips Hubbard, made her home with the Davises.

In 1922 the building that housed the Agriculture Department (formerly the National Hotel and long in need of replacement) was torn down (John 1972) to make way for the handsome building that now stands across Edenton Street from the State Capitol. When no suitable space could be found elsewhere in Raleigh, Brimley and Davis had to dismantle all the exhibits so the Agriculture Building annexes occupied by the museum could be converted into temporary offices. Some of the exhibit halls reopened in 1925, but all nine were not ready for visitors until 1928. The front lobby of the present museum building was rebuilt during the 1922-1928 period, and its marble floor was laid in 1936. However, the rest of the Agriculture Building annex was not rebuilt until 1952-1953. For a second time Harry Davis, now the director, went through the difficult process of taking down, storing, and reorganizing the museum's exhibits.

During his years at the State Museum, Davis enlarged and improved the geological and archaeological collections. For many years, Davis operated the only laboratory in the state equipped to analyze and identify mineral specimens (John 1972). During World War II, he expedited the search for scarce mineral resources by analyzing specimens sent to the museum. He also helped to publicize the state's numerous rocks and minerals by preparing exhibits and writing educational materials for distribution to the public. He especially enjoyed helping young people identify the specimens in their rock collections.

Perhaps because he and his wife never had children of their own, Davis found great satisfaction in working with young people. He was active in the Boy Scout movement and received the Silver Beaver award in 1934 (Anon. 1978a). As president of the North Carolina Archaeological Society, Davis obtained funding and organized groups of young men to assist with the excavation of Town Creek Indian Mound in Montgomery County, N.C. This work was done by the State Museum in cooperation with federal relief agencies (WPA, NYA), the N. C. Archaeological Society, the Department of Conservation, and the University of North Carolina. Davis encouraged many young naturalists in the pursuit of ornithology and herpetology. He even helped several of his young friends through college and eventually endowed a scholarship fund at his alma mater. He also assisted students by making museum records available for their graduate studies and by offering part-time jobs to those who needed extra income. John B. Funderburg, the present director of the State Museum, is one who benefited from having access to Brimley's old records, but he declined the offer of a job moving specimens during the 1952-1953 reconstruction project.

Davis was involved in the salvage of two of the museum's whale specimens, the Sperm Whale found at Wrightsville Beach in 1928 (Odum 1949, Brittain 1985) and the True's Beaked Whale (MacNeill 1940, Potter 1986). He was also one of the first bird banders to work in North Carolina. He particularly enjoyed leading expeditions to band colonial seabirds, and he helped many people, including this writer, learn the techniques of bird banding. The museum still receives occasional returns from the many Royal Terns

that Davis banded. Thus his work continues to provide useful information for ornithologists.

Davis and his longtime friend David L. Wray, then an entomologist with the Department of Agriculture, updated *Birds of North Carolina* for republication in 1959. Dr. Wray describes Davis as “an all-around naturalist” (Anon. 1978b). Davis’s broad understanding of natural history probably dated back to his boyhood in coastal North Carolina and was no doubt enhanced by his association with H.H. and C.S. Brimley.

Other publications by Davis include *Poisonous Snakes of Eastern North America with First Aid Guide* (Davis and Brimley 1944) and several contributions to *The Chat* (Davis 1948a, 1948b, 1951, 1953, 1958, 1959, 1960, 1961, 1964). During World War II thousands of the snake booklets were sold to the armed forces. Davis rewrote the pamphlet in 1966, and it has since been extensively revised and retitled by William M. Palmer, curator of lower vertebrates at the State Museum.

Palmer remembers Davis as a slightly built man, “undoubtedly wiry in his youth and tough in his later years” (Anon. 1978b). Although he was a quiet person with an even disposition and a dry wit, he was not above indulging in a bit of horseplay. Once, while on a field trip to Carteret County with young Palmer, Davis spotted a big Copperhead beside the road. Hopping out of the car, he put his foot on the snake, which then, to the horror of the 15-year-old boy, struck Davis’s leg. Davis paid no attention to the bite and calmly captured the specimen for the museum collections. Only later did Davis reveal the secret of his remarkable immunity to snakebite—a prosthesis. He had lost one leg as the result of a boyhood hunting accident.

Davis had a strong sense of civic responsibility, which was reflected in his membership in the Raleigh Rotary Club and in services performed for the State Employees Credit Union. As president of Raleigh Bird Club, he was also a leader in the movement to have Raleigh declared a Municipal Bird Sanctuary on 8 May 1946 (Deaton 1946). As president of the N.C. Archaeological Society, he helped further our knowledge of Native American culture.

Many people remember Harry Davis for the kindnesses that he casually bestowed upon friends and acquaintances. When children visited his office, he could almost always find some small treasure hidden among the piles of papers, books, and cigar boxes that always covered his desk—a key ring, a piece of candy, a pretty rock or seashell. Older visitors might be surprised months later by the arrival of a newspaper or magazine clipping, or perhaps a personal letter, pertaining to something the two had discussed.

If Mr. Davis can be criticized for anything during his tenure as director, it is for his fiscal conservatism. Instead of spending every dollar appropriated and campaigning vigorously for budget increases, Davis did everything possible to keep expenditures to a minimum. When the director was unexpectedly hospitalized in the early 1960s, the acting director discovered that the museum needed to renew its membership in certain professional societies, but there was no money in the budget for this purpose. Mr. Davis had been paying the dues out of his own pocket to save money for the State (David Adams, pers. comm.).

One of the best moves Davis made, in terms of financial planning for the museum, involved the North Carolina Bird Club. When T. Gilbert Pearson and the Brimley brothers decided to revise *Birds of North Carolina*, which they had originally published through the N.C. Geological and Economic Survey in 1919, there was no money to cover the

printing. Davis arranged for the Department of Agriculture to sponsor the project, and North Carolina Bird Club members contributed money to pay for extra color plates. Profits from the sale of the 1942 bird book were deposited in a special account to pay printing costs for future educational publications. These include the poisonous snake booklets (Davis and Brimley 1944) and the 1959 edition of *Birds of North Carolina* as well as *A Whale Called Trouble* (Brittain 1985) and museum publications in the process of being printed today. Now known as the N.C. Department of Agriculture Museum Extension Fund, "the bird book account" still provides the financial resources for numerous activities not covered by appropriations from the General Assembly. People who shop at the museum bookstore, sign up for public programs, or subscribe to *Brimleyana* all make their checks payable to the NCDA Museum Extension Fund.

When Davis retired as museum director effective 1 January 1966, Carolina Bird Club named him an Honorary Member for Life (Potter 1986) and presented him with a decorative box to hold his ever-present supply of cigars. As director emeritus and curator of geology, Davis maintained an office at the museum but served without pay until failing health forced him to enter a Carteret County nursing home. He died at Sea Level Hospital on 6 September 1978 at the age of 81. He is buried beside his wife at Oakwood Cemetery in Raleigh.

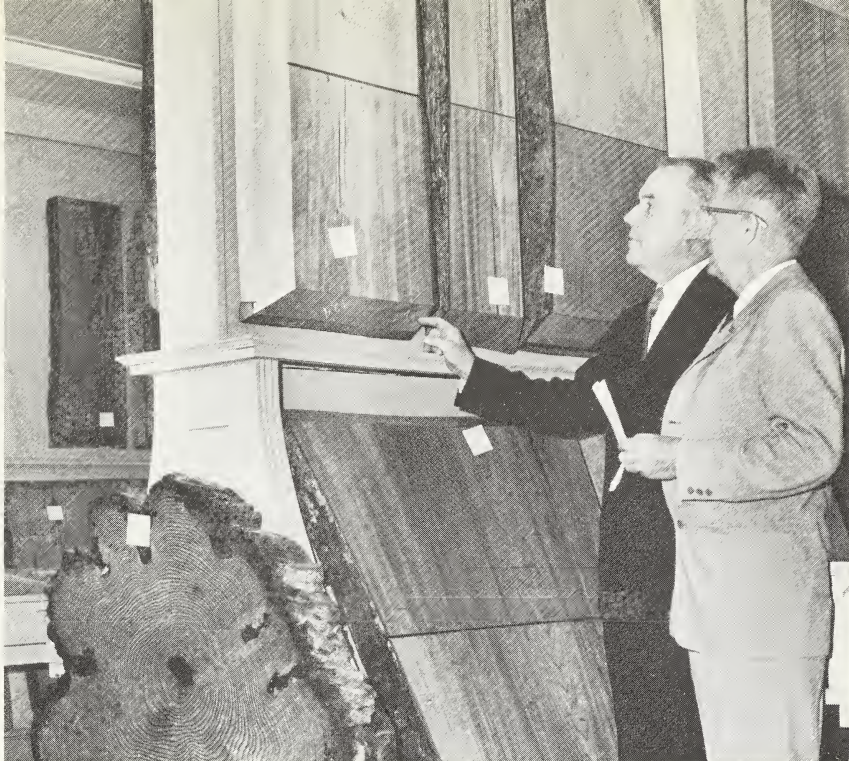
William L. Hamnett, who succeeded Davis as museum director, recalls that Harry always had plenty of time to talk with people about natural history. "He would just perk up when someone wanted to know something about the birds," Hamnett said.

Bill Palmer, who was only 8 or 9 years old when he first visited the museum and met Davis, said, "He had a museum-like philosophy. He never threw anything away . . . Harry Davis was a prince of a gentleman."

Acknowledgments. Several past and present members of the staff of the North Carolina State Museum shared personal recollections of Harry T. Davis. These include John B. Funderburg, the present director; William L. Hamnett, a former director; Grace John and Julia Nowell, former secretaries; and William M. Palmer, curator of lower vertebrates. Funderburg and Palmer read a preliminary draft of the manuscript and made suggestions for which I am grateful.

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- . 1953. Bird nesting colonies in North Carolina. *Chat* 17:43-44.
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- . 1960. Banding young birds in North Carolina nesting colonies. *Chat* 24:79-83.
- . 1961. Bird banding, 1961. *Chat* 25:63-64.



On 8 October 1957, Director Harry T. Davis and Commissioner of Agriculture L.Y. (Stag) Ballentine checked the temporary identification labels on the timber section while they were being prepared for exhibit following renovations made at the N.C. State Museum during the mid-1950s. These large slabs of wood were collected by Gifford Pinchot and W.W. Ashe, who surveyed North Carolina's forest resources during the 1890s. The specimens were a major part of the national forestry display at the Paris Exposition of 1901. Most of the 60 sections now hang in the stairwells of the museum.

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North Carolina State Museum of Natural Sciences, P.O. Box 27647, Raleigh, N.C. 27611

Edna Lanier Appleberry

PAULINE E. MEBANE

Edna Lanier was born 23 September 1894 at Horse Branch, a community in central Pender County, N.C., between Watha and Burgaw on the creek that gave the settlement its name. She married Cecil Appleberry and they had two sons, Cecil Jr. and Thomas. While rearing their two sons, Edna became a respected amateur naturalist in the fields of marine biology, botany, and ornithology.

The Appleberrys lived at Wrightsville and later in Wilmington, except for several years during the 1960s when Cecil's job as an accountant with the Atlantic Coast Line railroad took them to Jacksonville, Florida. Following his retirement, they returned to Wilmington.

The family were communicants of St. James Episcopal Church, where Cecil and Edna sang in the choir for many years. According to her sister, Louise, Edna was quite musical. A member of the high-school orchestra, she played the mandolin and gave lessons on the instrument. She also took elocution lessons and gave readings at schools and social events. Her sister remembers them as being of the "tear jerker" variety, but in later life Mrs. "A" exhibited an excellent sense of timing while telling humorous stories. Beneath her matronly and dignified demeanor lived an irrepressible comedienne.

Edna was versatile in many fields and deeply interested in advances in medical science. Had she been able to attend college, she might have become a physician or medical researcher in spite of her two handicaps. Her eyesight was somewhat impaired, and she had no sense of direction. She was immediately disoriented when taken out of familiar surroundings. Consequently, she could not safely drive an automobile.

Mrs. "A" was an astute birder whose acute hearing more than compensated for her deficient vision. After the organization of the Wilmington Bird Club in 1947, Edna Appleberry, Mary Baker, and I spent at least two mornings a week birding, mostly in New Hanover County. Occasional field trips took us across the Cape Fear River to Brunswick County. Bird study was a passion with Edna, and she never was satisfied until she had actually spotted a bird and heard its song. One spring morning she and I spent 2 hours chasing a Carolina Chickadee until she actually sighted it while it was singing a song unfamiliar to her.

CHILDHOOD INTEREST IN NATURE

Edna's interest in natural history began in early childhood, during a visit to the country when she was about four years old. "I picked up a beautiful little snake, which I know now was a Scarlet King Snake, but I just thought that it was a beautiful worm. I went out to the barn where my mother was trying to learn how to milk a cow. I ran to show her the snake, and the next thing I knew I was on the ground while my mother, the hired girl, and the cow all went over me leaving the stable." For causing the commotion Edna received a sound whipping, which taught her never to show an adult anything pretty that you find—just keep it to yourself.

Nonetheless, "The Indefatigable Mrs. A"—as *Raleigh News and Observer* columnist Charlotte Hilton Green dubbed her—spent a lifetime showing beautiful things to people of

all ages. For a number of years Mrs. "A" was in much demand, sometimes five days a week, for lectures on marine life at schools and clubs. For two years she maintained two large saltwater tanks constructed at the Lumina by the Tidewater Power Company. This was done as a surprise for her, so she could keep and share with others the living animals she found along the beach. Unfortunately, the designers forgot about the need for drains and aeration equipment. In spite of Edna's best efforts, keeping the tanks properly balanced was next to impossible. Everytime she would have everything just about right, a passing fisherman would donate part of his catch.

To help the Cape Fear Garden Club entertain the state organization, Edna agreed to exhibit her fine shell collection at a Wrightsville Beach liquor store that had closed for the winter. The empty shelves were perfect for the purpose. While she and her sons were arranging and labeling the shells, she stopped working long enough to enjoy a Coca-Cola a friend had brought her. Two women walked past on the boardwalk. "Just look at the brazen hussy drinking in broad daylight," one said to the other. The liquor was gone, but the ABC Store sign was still outside. The garden club meeting was such a success that the shells remained on display awhile longer. Visitors made a voluntary offering for the benefit of St. Andrews Episcopal Church. The sign, however, was changed to "Appleberry's Marine Museum."

Mrs. "A" did not become particularly interested in birds until 1942. Theodore Empie, who was certain the Wilmington area had more birds than any other part of North Carolina, gave her a membership in the North Carolina Bird Club and challenged her to prove him right. He could not do it himself, he said, because his arthritis made it impossible for him to do the necessary field work. When Edna protested that she knew nothing about birds, he replied confidently, "You can learn."

At first the learning was slow, but once she received instruction from Gregor Rohwer, an entomologist whose hobby was bird study, she progressed rapidly. Her first published field report appeared in the September 1945 *Chat*. She indignantly described the disastrous loss of preflight birds caused by the early-summer clearing of Spanish moss, dead trees, underbrush, and reeds around Greenfield Lake, which was near her home and the site for many of her bird walks.

WILMINGTON BIRD CLUB FORMED

In 1947, when an out-of-town woman complained because the Wilmington Chamber of Commerce had informed her that there was no local bird club, Mrs. "A" surprised herself by responding, "Certainly we have a bird club, and I'm the president of it." She promised to invite the lady to the next meeting and then telephoned the Chamber to list the Wilmington Bird Club and the name of its president. That same night she called together 14 people who had shown a real interest in bird study. When she arrived at the meeting, Edna announced, "Today I have founded Wilmington Bird Club, appointed myself president, and I have a slate of officers which I would like you to adopt unanimously." They laughed and did as they were told. Afterwards Rohwer remarked, "President, hell—she means dictator." Edna was an excellent executive and relentlessly expected full cooperation from all club members. She got it, too, because there was never a dull moment when Mrs. "A" was around.

In 1950 the Wilmington Bird Club became the Wilmington Natural Science Club to encompass the varied interests of its members. One major project of the club was the

opening of the Greenfield Park Nature Museum (Chat 16:89) in 1952. The museum offered excellent exhibits of carnivorous plants and seacoast life, including a shell collection, Mrs. H.E. Lane's insect collection, and mounted birds on loan from John Funderburg. Although it was popular with tourists and local residents during several years of operation by a volunteer staff, the nature museum never received enough financial support from the city to transform it into a permanent, professionally operated institution.

For 15 years Edna Appleberry conscientiously reported local bird sightings to the editor of *The Chat*, and her husband Cecil was frequently mentioned as an observer. This quiet, unassuming man became an excellent bird student in his own right, and he never hesitated to argue with Mrs. "A" on questions of identification. Cecil and Edna were really a team. Soon the Appleberrys and their friends proved that Theodore Empie was right about the great variety of bird life in the lower Cape Fear area. They added a new species to the state bird list (the Black-whiskered Vireo found by Dot Earle), and on one Christmas Bird Count they recorded 169 species, the highest number reported anywhere in the country that year.

Naturalists came from all over the state, and all over the world, to enjoy Mrs. Appleberry's guided tours of the best birding spots. In his 1951 book *North with the Spring*, Edwin Way Teale referred to Mrs. "A" as "one of the most enthusiastic and capable amateur naturalists we met." All of her guests were not famous, but she was gracious to everyone. Once she was leading two young couples to find three local specialties—Red-cockaded Woodpecker, Painted Bunting, and Bachman's Sparrow. One of the men became bored with the tedious search for the elusive sparrow. "Tell me, Mrs. Appleberry," he inquired politely, "have you ever seen a No U Tern?" Without batting an eye or cracking a smile she replied sweetly, "No, Mr. Newman, but I have seen many an Extra-marital Lark."

Edna Appleberry was elected president of Carolina Bird Club in 1958. During her one-year term, she wrote three President's Page messages for *The Chat*, pointing out the strengths and weaknesses of the club and urging members to "get busy on these projects," especially the ones that would involve young people in CBC activities.

At the winter meeting held at Myrtle Beach in 1959, one club member was very pregnant. Mrs. "A" used her presidential authority to persuade a bird-watching doctor to accompany the expectant mother on the field trips, just in case there should be a medical emergency. There was no emergency. Patricia Eileen Potter was not born until nearly two months later. From her hospital room, Eloise Potter wrote Mrs. "A" to announce the arrival of the newest CBC member. At the spring meeting Mrs. "A" passed the good news along to the membership. "Do you remember the doctor I found to look after Mrs. Potter at Myrtle Beach?" she asked. "Well, I later found out that he is a dentist, but he's awfully good at extractions."

Mrs. Appleberry genuinely enjoyed working with young people. She was nature director at the Wilmington Girl Scout Camp for a number of years, and she also befriended boys who were particularly interested in birds. The boys' appetite for bird study was reportedly whetted by the sumptuous picnic lunches Edna packed for field trips and bird counts. Mrs. "A" taught integrity in reporting and respect for other people's property. "I insisted on it, and if they couldn't, then they weren't my boys," she declared. John B. Funderburg, now director of the North Carolina State Museum, was one of her boys. "If it had not been for Edna and Cecil Appleberry," he says, "I might have remained a taxidermist in Wilmington for the rest of my life. They insisted that I take advantage of the

GI Bill and go to college." When the museum and Carolina Bird Club published a new state bird list in 1978, it was, at Funderburg's suggestion, dedicated in memory of Edna Lanier Appleberry, who died on 30 January 1978.

The secret of Mrs. "A's" success as wife and mother, church and club leader, naturalist, teacher, and friend was that she never lost her love of beauty, her eagerness to learn, her concern for people, her integrity, or her sense of humor. Her motto was: "What's the use of what is done/ If in the doing there be no fun."

Acknowledgments. This article is based in part on "I've been a very busy Lady" by Bobbie Marcroft, which appeared in the May 1977 issue of *Scene Magazine*, a publication of the Cape Fear Media Associates of Wilmington, N.C. The list of Edna Appleberry's publications was compiled by Eloise F. Potter. She and John B. Funderburg reviewed the manuscript and shared their memories of Mrs. "A" with me.

Route 4, Box 434, Wilmington, N.C. 28405

ORNITHOLOGICAL PUBLICATIONS OF EDNA LANIER APPLEBERRY

(Excluding Christmas and Spring Bird Counts)

- 1945. Wilmington, N.C. [Habitat destruction during nesting season.] Chat 9:59-60.
- 1946. Arkansas Kingbird at Wilmington. Chat 10:86.
- 1948a. Young robin at Wilmington, N.C. Chat 12:65.
- 1948b. Both Glossy and White Ibises observed at Wilmington. Chat 12:67-68.
- 1948c. Wilmington, N.C. [Winter bird reports.] Chat 12:85.
- 1949a. Dickcissel (?) at Wilmington, N.C. Chat 13:33.
- 1949b. Arkansas Kingbird seen at Wilmington, N.C. Chat 12:48.
- 1949c. Wilmington, N.C. [Winter bird reports.] Chat 13:48.
- 1949d. Brown Thrasher nests in hole in ground. Chat 13:63.
- 1950. Wilmington, N.C. [Fall migration reports.] Chat 14:31..
- 1951. Noddy Tern seen in Brunswick Co., N.C. Chat 15:33.
- 1953. Shore birds at Wilmington, N.C. Chat 17:94.
- 1955. Christmas counting in Wilmington, N.C. Chat 19:82-83.
- 1957. White-tailed Kite at Wilmington. Chat 21:70-71.
- 1958a. President's page. Chat 22:30.
- 1958b. Winter hummingbird at Wilmington. Chat 22:46.
- 1958c. Wilson's Phalarope at Wilmington. Chat 22:69-70.
- 1958d. President's page. Chat 22:72.
- 1959a. A spring observation of the American Golden Plover. Chat 23:36.
- 1959b. President's page. Chat 23:45.
- 1959c. Redstart nesting at Fayetteville, N.C. Chat 23:89.
- 1961. Black-whiskered Vireo, a new species for North Carolina. Chat 25:17-18.

About the Author. Mrs. Mebane is the last surviving charter member of the Wilmington Bird Club.



Thomas L. Quay, above right, was photographed on a field trip with Stuart Critcher, one of his zoology students at N.C. State University during the late 1940s.



C.S. Brimley, the first president of CBC, carries a net he used for collecting insects. Though colorblind and, toward the end of his life, blind in one eye, he managed to identify birds by their black-and-white patterns with the aid of a hand-held telescope.



Harry T. Davis (holding pipe) and William Craven were charter members of CBC. All photos on this page were contributed by Mr. Craven.

CBC PHOTO ALBUM

H. Douglas Pratt displayed his art at a CBC meeting held at Charlotte, N.C., in February 1968. (Photo by Robert C. Ruiz)



In 1945, CBC leaders enjoyed a picnic lunch at the home of Zora Jenson (far left) in Chapel Hill, N.C. Next to Mrs. Jenson is CBC President H.H. Brimley, who is accepting food from Charlotte Hilton Green. In the background are, left to right, an unidentified woman, Robert Wolff of Goldsboro, and Robert Overing, a postal inspector then stationed in Raleigh. While working in Washington, D.C., Overing was among the first to study bird migration by systematically picking up specimens killed by collisions with tall, lighted structures, in his case the Washington Monument. (Photo by Wm. Craven)



Annie Rivers Faver

BILL FAVER

Annie Rivers Faver lived most of her life in Richland County, S.C., within one-half mile of where she was born on 25 February 1909. Her childhood ramblings with her country-doctor father instilled an early love of the out-of-doors and an appreciation of flowers, butterflies, and birds. Love of reading poetry and history added to her skills in writing and in relating her birding enthusiasm to friends. It was her father who gave her the nickname "Toncie" because she was such a tiny girl.

Toncie's father was Wilfred Jeannerette Rivers, who spent some of his boyhood in Columbia when his father, William James Rivers, was professor of Greek Anthology and acting president of South Carolina College, now the University of South Carolina. Wilfred Rivers collected bird eggs, as did many boys of his time, and his descendants recently donated his specimens to the Charleston Museum. He also had a talent for sketching butterflies. Following graduation from Johns Hopkins, Dr. Rivers came to lower Richland County to practice medicine along with Doctors Hayne and Claytor. Toncie's mother was the former Annie Druscilla Wilson of Baltimore, Maryland.

In April 1931 Annie Rivers married William H. Faver, a merchant and oil distributor in Eastover. Their children are William H. (Bill) Faver Jr. and Anne, who married Gerald P. Wiener and now lives in El Paso, Texas.

The home in which Toncie Faver reared her children was on a hillside in lower Richland County in the sandhills above the fertile lands where the Congaree and Wateree Rivers come together. The swamps, fields, ponds, hardwoods, pines, shrubs, and hedgerows offered varying habitats for wildflowers and birds. Toncie knew every corner of the area and guided many visitors and friends to new birding finds in the vicinity of Eastover. On the 10 acres of her homeplace, some 44 years of records of daily sightings and nestings attest to her diligence in observing bird life and migrations in her yard. The hillside of natural plantings, tall pines, poplars, gums, shrubs, and wildflowers was supplemented with bulbs and daylilies, hollies, and other berry-bearing shrubs to entice the birds. The spring and branch at the bottom of the hill—surrounded by sweet shrubs, wild azaleas, and ferns—was a warbler paradise!

The bird feeders were an important part of Annie Faver's sanctuary. Her "regulars" were recorded along with the special visitors, and many became the subjects of her regular weekly articles in the *Columbia Record* and the *Columbia State* newspapers. Her writings invited correspondence with other bird lovers, and many of their stories found their way into her articles. These interests led to the regular "Backyard Birding" feature in *The Chat*, which she also served as co-editor with Kay Curtis Sisson from mid-1953 through 1958.

Toncie loved to have visitors. She gladly entertained students, garden clubs, and anyone interested in knowing and appreciating birds. She presented many programs on birds for schools and organized and directed a Junior Audubon Club for Eastover School for many years. Garden Clubs throughout South Carolina invited her to talk about birds and illustrate her narratives with color slides.

Several trips to visit family offered birding experiences to the Florida Everglades, Texas, and Germany. In the Everglades she saw her first Everglades Kites, Painted



ANNIE RIVERS FAVER

Buntings, Scarlet Ibis, Roseate Spoonbills, and Sandhill Cranes. Her Texas visits brought Whooping Cranes, Scissor-tailed Flycatchers, American Avocets, and several other birds to add to that life list. She learned some of the European birds on her trip to Germany.

Among her birding thrills were seeing her pear tree filled with Evening Grosbeaks, her mulberry adorned with Rose-breasted Grosbeaks and Northern Orioles, and her yellow jasmine decorated with Carolina Wrens. On three occasions she sighted the rare Kirtland's Warbler in her yard (Chat 13:79-80, 15:83, and 31:98).

There were interests other than birds, such as her work in local history, photographing and documenting dwellings of historical interest in lower Richland County. She was a faithful communicant of Zion Episcopal Church in Eastover and was a member of Pineland Garden Club, Daughters of the American Revolution, and United Daughters of the Confederacy. The Audubon Society, National Wildlife Federation, Nature Conservancy, and other nature-oriented groups gained her support. With Gilbert Bristow, Mrs. G.E. Charles, Mrs. P.B. Hendrix, Kay Sisson, and others, she was active in the Columbia Natural History Society.

At the time of her death on 28 May 1973, Toncie had returned to the staff of *The Chat* as editor of "CBC Roundtable." In all, she served the journal in an editorial capacity for 17 years.

Annie Rivers Faver personified the unique contribution to be made by amateur ornithologists in keeping accurate and complete records, in constantly learning more and

more about the birds she loved, and in sharing her concerns and enthusiasm for the environment with all who would listen to her or read her writing.

318 Ann Street, Wilmington, N.C. 28401

About the Author. Bill Faver shares his mother's and his grandfather's interests in nature. A graduate of Clemson University and the Presbyterian School of Christian Education, he has worked as director of education in Presbyterian churches in Orlando and Miami, Florida; Corpus Christi, Texas; and High Point, N.C. He developed a Presbyterian camp and conference center in the Florida Everglades and the Environmental Education Center for the City of High Point. Currently he is director of management services for Comprehensive Home Health Care in Wilmington, N.C. Bill and his wife Catherine have two children. "Borrowed Images," an exhibit of his nature photographs, was at the Blue Dolphin Gallery in Southport, N.C., in December 1986 and January 1987.

A WORD OF THANKS

The Editor of *The Chat* appreciates the generosity of our many contributors—artists, photographers, and authors alike. However, it would be impossible to maintain the quality of the journal without the advice of the anonymous manuscript reviewers and others who share their expertise behind-the-scenes. The Editor thanks those who assisted her from 1977 through 1986: Alice Allen-Grimes, Gladys Baker, Keith Bildstein, J.H. Carter III, Richard J. Davis, John B. Funderburg Jr., John O. Fussell III, Robert J. Hader, Julian R. Harrison, E. Wayne Irvin, Roxie C. Laybourne, David S. Lee, Harry E. LeGrand Jr., Gilbert S. Grant, YuLee R. Larner, G. Gordon Mahy, Mary C. McKittrick, Terry S. Moore, Charles P. Nicholson, Val Nolan Jr., James F. Parnell, Margery Plymire, William Post, Thomas L. Quay, F.R. Scott, Susan Sferra, Norma Siebenheller, Marcus B. Simpson Jr., Paul W. Sykes Jr., Michael Tove, and Robert G. Wolk.

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates Winter 1985-86 unless otherwise indicated; CBC= Christmas Bird Count)

RED-THROATED LOON: Rare inland were two seen by John Hay at Lake Hartwell, near Clemson, S.C., on 16 February. One remained until 2 March (Charlie Wooten, Sidney Gauthreaux).

NORTHERN FULMAR: A first for North Carolina in December was one seen on a pelagic trip off Oregon Inlet on the 22nd, as noted by Dave Lee and others.

BLACK-CAPPED PETREL: Dave Lee observed the species off Oregon Inlet on 5 and 22 December and 17 February. The species is regular all year in the Gulf Stream, particularly east of the Outer Banks.

GREATER SHEARWATER: Seldom seen in winter was one off Oregon Inlet on 22 December (Dave Lee and party).

MANX SHEARWATER: Apparently regular offshore in winter, though uncommon at best, several Manxes were observed by Dave Lee and party off Oregon Inlet on 22 December.

AUDUBON'S SHEARWATER: Not previously seen in midwinter in North Carolina were at least five off Oregon Inlet on 22 January (Dave Lee).

GREAT CORMORANT: Record numbers for the Carolinas were found by Bill Brokaw in the lower Cape Fear River, N.C. He saw 12, all adults, in comparison with Double-crested Cormorants, on 20 January. John Fussell saw nine there on 28 February, and six more (four adults) at Wrightsville Beach, N.C., on 1 March. Single individuals in that state were seen at Bodie Island on 23 December (Haven Wiley), at Cape Hatteras point on 26 and 27 December (Harry LeGrand), Hatteras village on 27 December (Ricky Davis), and Pea Island on 31 December (Mike Tove et al.). A few were again seen this winter at Huntington Beach State Park, S.C. (Heathy Walker et al.), where regular at that season.

ANHINGA: One was quite out of range in winter at Willow Springs in Wake County, N.C., where it was seen in late January by David Carroll.

MAGNIFICENT FRIGATEBIRD: Very late was an immature seen on 1 December at Folly Beach, S.C., by Connie and Reid Taylor.

GREAT BLUE HERON: A good winter count for the mountains was nine, along the French Broad River near Marshall, N.C., in mid-January (John Young).

GREAT BLUE HERON (WHITE PHASE): A first specimen of this subspecies—the "Great White Heron"—for South Carolina was one collected by Will Post on 22 February near the North Santee River. It was originally seen by Tommy Graham on 20 January.

TRICOLORED HERON: One was notable on 29 December at Middletown, in mainland Hyde County, N.C. (Harry LeGrand).

GREATER FLAMINGO: In mid-December one was seen in Long Bay, west of Cedar Island, N.C., by T. Tuttle (fide James Parnell).

FULVOUS WHISTLING-DUCK: Perry Nugent and others saw one at Savannah National Wildlife Refuge, S.C., on 14 December, and two near McClellanville, S.C., on 22 December. Another was late—most have departed southward by late December—on 14 February at Magnolia Gardens near Charleston, S.C. (Sidney Gauthreaux, Will Post).

TUNDRA SWAN: A few were seen in winter in central North Carolina, near Louisburg (Ricky Davis), Raleigh (Harry LeGrand et al.), and Fayetteville (Philip Crutchfield, Jim Sipiora).

GREATER WHITE-FRONTED GOOSE: Very rare was one seen near Townville, S.C., on 23 February by Sidney Gauthreaux and Charlie Wooten. Also in that state, as many as seven were

- seen in December at Santee National Wildlife Refuge, where reported most every winter in recent years (Robin Carter, Heathy Walker, et al.).
- SNOW GOOSE:** One white-phase goose was well inland at Winston-Salem, N.C., as noted from 7 to 28 January by Bob Witherington, Ramona Snavelly, and Charles Frost. An excellent total away from the North Carolina Outer Banks was 8000 at Pungo National Wildlife Refuge, N.C., on 24 and 25 January; only a few dozen were "Blue Geese" (Harry LeGrand, Ricky Davis).
- ROSS' x SNOW GOOSE HYBRID:** The first Carolina report of a hybrid of these two species was noted at Pea Island, N.C., from 23 to 31 December. Haven Wiley made the original observation, and the bird was later studied closely by Claudia Wilds and others. It was seen with a large number of Snow Geese; it did not have the stubby bill or the bluish-gray base of the bill of the Ross' Goose. A slight "grinning patch" between the mandibles seemed intermediate between that of the two parent species. The bird's size was noticeably smaller than that of the Snow Geese. There were no reports of Ross' Geese this winter.
- NORTHERN SHOVELER:** Dick Brown saw a male near Harrisburg, N.C., in late December.
- GADWALL:** Rare in the mountains was a male at Lake Osceola in Hendersonville, N.C., on 11 February (Ron Warner).
- EURASIAN WIGEON:** A male was seen at an impoundment east of Beaufort, N.C., on the Morehead City CBC on 22 December by Bob Holmes and Bill Bell.
- RING-NECKED DUCK:** A good count for South Carolina was 1400 near Bennettsville on 7 February (Douglas McNair).
- GREATER SCAUP:** Rarely reported from the North Carolina mountains, four males were seen by Douglas McNair at Cashiers on 17 December, and two males were noted by Robert Ruiz at Swannanoa on 21 December.
- KING EIDER:** Single birds were seen at a small pond at Pea Island, N.C., on 28 December (Bob Lewis) and in the surf at Fort Macon State Park, N.C., from 15 December to 9 January (John Fussell et al.).
- COMMON EIDER:** Presumably a record count for the Carolinas was a flock of seven (five females and two immature males) observed in the surf at Bodie Island, N.C., on 28 December by David Hughes and Ned Brinkley. An immature male was also noted at Folly Beach, S.C., from 15 to 20 February by Perry Nugent and others.
- WHITE-WINGED SCOTER:** Seldom seen on an inland CBC was one (a male) observed by Ricky Davis and Mike Tove on 5 January at Jordan Lake, N.C. A rather good total for South Carolina was 13, at Huntington Beach State Park on 1 February (Charlie Wooten et al.).
- COMMON MERGANSER:** Very small numbers occurred in the Carolinas during the winter. Reports were made at Lake Wallace near Bennettsville in South Carolina (Douglas McNair) and in North Carolina on Lake Julian near Asheville (Ron Warner), Roanoke Rapids Lake (Merrill Lynch), Pamlico Point (Philip Crutchfield, Morris Whitfield), and Fort Fisher (Ricky Davis, John Fussell).
- BLACK VULTURE:** An excellent mountain count was eight or nine just south of Asheville on 20 December (Simon Thompson).
- BALD EAGLE:** The best inland counts for the winter were 10 seen by Dick Brown on an aerial survey from High Rock Reservoir to Blewett Falls Lake, N.C., in early January, and nine seen at Jordan Lake on 1 February by Bill and Margaret Wagner and party.
- RED-TAILED HAWK:** Mike Cooper observed a dark-phase bird in the Hilton Head Island-Savannah area of South Carolina from 30 January to 15 February. Such color phases are very rare in the eastern United States, and the bird might have been a visitor from the western part of the country.
- GOLDEN EAGLE:** A subadult apparently wintered at Pungo Lake, N.C., where it was seen from 1 January into early February by Bob Lewis, Mike Dunn, and others.
- MERLIN:** In northwestern South Carolina, individuals were rare at Townville on 20 December and

at Clemson on 21 January (Sidney Gauthreaux, Charlie Wooten). Also inland was one seen by Ricky Davis and Mike Tove on the Jordan Lake CBC on 5 January.

PEREGRINE FALCON: In addition to a few winter sightings along the coast, one was unusual on 6 February at Shelby, N.C. (Barton Rope).

YELLOW RAIL: One was flushed by Sue Moske at North Pond on Pea Island on 1 December; the white wing stripe was seen.

AMERICAN COOT: A good inland count of 2300 was noted by Douglas McNair at Bennettsville, S.C., on 7 February.

SANDHILL CRANE: Robert Ruiz saw one flying due west over Swannanoa, N.C., 500+ feet above the town, on 20 July 1984. He noted that the bird's head and feet extended straight out from the body. Also seen overhead in flight, in South Carolina, were two about 5 miles N of Conway on 22 January (Steve Thomas) and one near Gray Court in Laurens County on 4 February (Douglas McNair).

KILLDEER: One was seen in flight over Grassy Ridge, at a very high elevation of 6100 feet, on 30 December by Rick Knight.

LESSER YELLOWLEGS: Unusual well inland in midwinter were single birds seen near Cary, N.C., on 2 February (Ricky Davis) and on 24 February near Fayetteville (Philip Crutchfield).

SPOTTED SANDPIPER: One observed by John Fussell was rather rare in midwinter near Beaufort, N.C., on 19 February.

WHIMBREL: Notable in winter for North Carolina were one at Oregon Inlet on 31 December (Harry LeGrand, Bob Lewis, Mike Tove), one at Sunset Beach on 16 February (Philip and Jim Crutchfield), and two at New Inlet in Brunswick County on 27 February (John Fussell).

LONG-BILLED CURLEW: Kitty Kosh discovered one at Zeke's Island near Fort Fisher, N.C., on 12 January, and it was seen by other birders later in the month.

DUNLIN: One was late in Bennettsville on 29 December (Douglas McNair).

LONG-BILLED DOWITCHER: Infrequently seen in southeastern North Carolina in winter were eight seen and heard on the Wilmington, N.C., CBC on 28 December by Maurice Barnhill and Greg Massey, and two noted by Ricky Davis on 4 January at Fort Fisher.

RED-NECKED PHALAROPE: Seldom reported in the winter were 46 observed by Dennis Forsythe off Charleston on 5 February.

RED PHALAROPE: Dave Lee and Dennis Forsythe recorded the species on several winter pelagic trips off Oregon Inlet and Charleston, respectively.

POMARINE JAAGER: Perry Nugent and party saw one chasing gulls near a jetty in Charleston harbor on 25 January. A jaeger of unknown species was noted by Sidney Gauthreaux and others at Huntington Beach State Park on 1 February.

COMMON BLACK-HEADED GULL: The only winter report was one seen on the beach at Pea Island on 28 December (Allen Bryan, Bob Lewis).

LESSER BLACK-BACKED GULL: In South Carolina, where rather rare, were single birds at Huntington Beach State Park on 7 February (Robin Carter) and at Litchfield Beach on 26 March (Mary Ann Sunderland).

BLACK-LEGGED KITTIWAKE: In addition to reports off Oregon Inlet, where regular, one was seen 5 miles off Caswell Beach, N.C., on 4 January (Greg Massey) and 30 were noted by Dennis Forsythe off Charleston on 18 February.

DOVEKIE: Dave Lee had a good count of five in Roanoke Sound near Manteo, N.C., on 22 January.

THICK-BILLED MURRE: Perry Nugent, Steve Compton, and others carefully watched one in the surf at Huntington Beach State Park on 4 January, for one of just a few South Carolina records.

RAZORBILL: One was seen in the surf at Pea Island on 28 and 30 December by Allen Bryan and many other birders.

YELLOW-BILLED CUCKOO: Most unusual was a dead cuckoo found by Robert Ruiz at Swannanoa, N.C., on 5 December.

CHUCK-WILL'S-WIDOW: One road-killed bird was found by Darryl Moffett near Shallotte, N.C., on 15 January. There have now been three winter records for this species along that state's coast in the past few years.

RUBY-THROATED HUMMINGBIRD: An immature was present all winter (3 December into March) at Kitty Kosh's feeder in Wilmington. Its specific identity was uncertain until she observed it molting into breeding plumage (male) in March. Other *Archilochus* hummingbirds during the winter, of unknown identity, were two in Sumter, S.C., from late fall into January (fide Evelyn Dabbs) and one on Bogue Banks, N.C., on 21 December (Mary Roberts). [The Black-chinned Hummingbird, almost identical in plumage to the Ruby-throated (except for the adult males) is a possibility in winter. Birders should not report a winter *Archilochus* hummingbird as a Ruby-throated unless the bird is an adult male (bright red throat). There has been too much confusion about winter hummingbird records because of careless reports with few or no details on plumage. Observers with hummingbird feeders should carefully note whether a winter hummingbird has been present almost daily since summer and early fall (whereby it is likely a lingering Ruby-throated) or whether it appeared in late fall or winter after a gap of one to several months since the departure of the last Ruby-throated at the feeder (whereby the unknown hummingbird might be a Black-chinned).—HEL]

RUFIOUS HUMMINGBIRD: A female or immature was noted at a feeder in Greenville, S.C., from late November to late December. It was captured and measured in the hand by Greg Cornwell; measurements of the outer tail feathers ruled out the very similar Allen's Hummingbird, which has not been reported for certain east of Louisiana. Another female or immature was carefully studied at the feeder of Mr. and Mrs. William Kitch in Whispering Pines, N.C., from mid-October to mid-January by Roberta Davis, Jay Carter, and Jeff Walters. It was likely a Rufous, according to Carter, who also noted that an observer near Whispering Pines had seen two "orange" hummingbirds at one time in October about 2 years ago, most likely Rufous Hummingbirds. [It is certain that this species is not as rare in the Carolinas as the very few conclusive records indicate. Thousands of people maintain hummingbird feeders into late fall, and there are numerous unpublished reports, often in newspapers or local newsletters, from this time period; many birds might be Rufous.—HEL]

RED-BELLIED WOODPECKER: At a high elevation was one seen at Glen Ayre, N.C., at 3300 feet elevation on 30 December (Rick Knight).

TREE SWALLOW: The first winter records for Cumberland County, N.C., were two near Fayetteville on 8 February and one there on 14 February (Philip Crutchfield).

PURPLE MARTIN: Two males were seen on the early date of 7 February at Bennettsville by Douglas McNair.

COMMON RAVEN: Douglas McNair observed a pair apparently on territory, though no evidence of breeding was found, at Table Rock mountain in northern Pickens County, S.C., on 3 February. He saw a single raven at nearby Caesar's Head, S.C., on 31 January.

BROWN-HEADED NUTHATCH: Robert Ruiz reported that Roland Sargent saw a pair feeding two young out of the nest from 9 to 11 June 1972 at Lake Julian, in southern Buncombe County, N.C. Several were also seen on the Blue Ridge Parkway northeast of Asheville, N.C., on 21 December by Andrew Brown; and Ruiz saw the species at nearby Swannanoa in February.

BLUE-GRAY GNATCATCHER: North of the winter range in midwinter were individuals noted near Townville on 5 January (Sidney Gauthreaux) and at Morehead City on 21 January (John Fussell).

NORTHERN MOCKINGBIRD: A winter visitor was at a rather high elevation at Cashiers, N.C. (3400+ feet), where seen by Douglas McNair from 27 December to 4 January.

WHITE-EYED VIREO: Notable in winter was one at a feeder in Oconee County, S.C., from 20 November to 4 December (E.L. Shuler). Others were observed, away from feeders, at nearby

Townville on 9 February (Charlie Wooten) and near Harlowe, Carteret County, N.C., on 12 January (John Fussell).

SOLITARY VIREO: This species has been increasingly seen on piedmont CBC's but there are few piedmont reports after 5 January. Paul Hart saw one at Crowders Mountain State Park, N.C., on 12 January; Bill and Pat Brokaw saw one at a suet feeder on 30 January near Charlotte, N.C.; and Harry LeGrand observed another at Umstead State Park, N.C., on 23 February.

ORANGE-CROWNED WARBLER: Slightly outside the regular winter range were singles noted near Liberty, S.C., on 27 January (Charlie Wooten), and at Charlotte on 3 February (Heathy Walker). At Fayetteville, where this warbler is somewhat regular in winter, one was present at a feeder from 17 January until the end of February (Philip Crutchfield, Ruth Chesnutt).

NASHVILLE WARBLER: Apparently the second and third winter records for North Carolina were individuals carefully studied on CBC's. John Fussell saw one near the North River near Beaufort on 22 December, and Harry LeGrand and others saw another at Wanchese on 28 December, and again 3 days later.

CAPE MAY WARBLER: Paul Hart observed one, apparently a male, at Crowders Mountain State Park, N.C., on 25 December.

PRAIRIE WARBLER: Individuals were observed near the North Carolina coast in central Carteret County on 25 December (John Fussell), in the Green Swamp in Brunswick County on 27 December (Mark Oberle), at Pea Island on 28 December (Paul Sykes Jr., Virginia Valpey), and at Fort Fisher on 4 January (Ricky Davis).

BAY-BREASTED WARBLER: Charlie Wooten noted one on 5 January near Anderson, S.C.; the species is seldom seen in the United States in winter. He observed the "greenish back with streaks, wingbars, and a buffy patch below the wing on the side"; and he also noted "black legs and was not yellow underneath."

WILSON'S WARBLER: An adult male was seen at Greenfield Lake in Wilmington, N.C., from 10 to 17 January by Kitty Kosh and other birders.

YELLOW-BREASTED CHAT: Early-winter records were of individuals noted near Pineville, N.C., on 7 December (David Wright) and near Townville on 8 December (Charlie Wooten).

WESTERN TANAGER: Westerns were observed in two coastal North Carolina towns. Kitty Kosh noted one at her feeder in Wilmington from 24 December to 3 January, and Greg and Ann Lovelace had another at their feeder in Beaufort from 23 February to 11 March.

DICKCISSEL: Another feeder visitor was a Dickcissel—an adult male—seen by Vaughn Morrison at Raleigh from 28 to 30 March. Away from a feeder was one seen near Duck, N.C., on 21 December by Dave Lee, Wayne Irvin, and Benton Basham.

VESPER SPARROW: Good winter counts for the North Carolina piedmont were 40 to 50 in Cleveland County on 2 February (Heathy Walker, Harriet Whitsett) and nine south of Charlotte on 28 December (David Wright).

AMERICAN TREE SPARROW: Charlie Wooten carefully observed one near Greenville, S.C., on 28 December. He has previous experience with the species in western Arkansas.

LARK SPARROW: Seldom seen inland in winter was one south of Charlotte from 28 December to 11 January (David Wright).

HENSLOW'S SPARROW: A good find was two seen by Robin Carter in a powerline clearing near Santee Dam of Lake Marion, S.C., on 12 February.

LINCOLN'S SPARROW: The only winter report for South Carolina was as many as five birds in the Townville area all season (Charlie Wooten). Lincoln's were observed at many sites in the North Carolina coastal plain; all were in recent clear-cuts where grasses and forbs have vegetated the ground and where brush piles were present. Individuals were seen near Lake Mattamuskeet on 29 December (Harry LeGrand), at Wards Corner in Pender County on 11 and 17 January (LeGrand, Wayne Irvin, and others), at Pungo National Wildlife Refuge on 24 January (LeGrand, Ricky Davis), at Wilson Municipal Airport on 16 February (Davis), and at First Colony Farms near

Cherry on 23 February (Davis). Another was in that state's piedmont on 7 December near Pineville (David Wright).

WHITE-CROWNED SPARROW: This species is rarely seen in the southern coastal plain of North Carolina. Thus, notable were two adults and an immature at the Laurinburg-Maxton Airfield on 8 February (Douglas McNair) and records of single birds at three places in Cumberland County in January (Philip Crutchfield).

LAPLAND LONGSPUR: By far, a record count for the Carolinas was a remarkable flock of 68 tallied by Ricky Davis at First Colony Farms near Cherry on 23 February. There were just two Horned Larks with the longspurs, the reverse ratio usually found in the Carolinas. As many as seven were present at the Charlotte Motor Speedway near Harrisburg from 17 December to 26 February (David Wright et al.). Vaughn Morrison saw two at Cape Hatteras point on 4 January. In South Carolina, the only report was one far south in Orangeburg County on 4 February (Douglas McNair).

YELLOW-HEADED BLACKBIRD: Ken Knapp saw one at Pea Island on the CBC on 28 December.

NORTHERN (BULLOCK'S) ORIOLE: As many as two immature males were seen at Charles Lincoln's feeder in Morehead City by John Fussell from mid-March to 28 April.

HOUSE FINCH: Notable counts near the southern end of the winter range were as many as 52 at Kitty Kosh's feeders in Wilmington during the winter, 164+ in Bennettsville on 27 and 28 February (Douglas McNair), and 200+ in a flock near Monticello, S.C., on 24 January (Robin Carter).

RED CROSSBILL: Gail Whitehurst saw a flock of approximately 12 at Asheville on 6 January.



Roundtable

... with Louis C. Fink

New Address

This columnist has moved to Florida, but is continuing the column at the request of the Editor. Contributions are welcome, so send in your questions, comments, and observations. Yes, I miss my friends in Carolina—but consider this: Little Blue Herons and Cattle Egrets feed on the front lawn, and a Killdeer skitters through the standing water next to my car in the parking lot.—LOUIS C. FINK, 100 Clyde Morris Blvd., #155, Ormond Beach, Florida 32074.

Clothes Make the Man?

Scientists have studied chickadees and sparrows to learn whether feather patterns make a difference in social standing. It appears that when markings are bleached out or enlarged artificially, the bird going back to his own flock must fight for dominance. But in a new environment, the bird with strong, artificial marking may be accepted as a leader.

(MORE ITEMS ON PAGE 4)



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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, 100 Clyde Morris Blvd., No. 155 Ormond Beach, Fla. 32074
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid

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OUR COVER—Photographer Paul A. Stewart caught two fledgling Wood Ducks about to emerge from a nest box.

Review of Wintering by Eared Grebes in the Southeastern United States

RICHARD C. BANKS and ROGER B. CLAPP

Forty years ago the Eared Grebe, *Podiceps nigricollis*, was unrecorded in any of the southeastern United States and was rare in all parts of eastern North America. The eastern limits of both breeding and wintering distribution of the North American subspecies, *P. n. californicus*, were approximately along a line from southern Manitoba to southern Texas (A.O.U. 1931, 1957). In 1948 the species was first recorded in Louisiana (Lowery 1974:106), and wintering records began to accumulate in the Northeastern States (Bull 1974:55). The first Eared Grebe was reported in Florida in 1953 (Sprunt 1954), and from South Carolina in 1959 (Dawn 1959). The species was first found in several Southeastern States in the early 1960s. Buckley (1968a) reviewed the increasing number of records in eastern North America, but listed only a baker's dozen from the Atlantic coast south of New York.

Although the most recent versions of state check-lists and bird books for the Southeastern States indicate that the Eared Grebe occurs regularly, if still somewhat uncommonly, there seems to be no general summary of its spread into the Southeast as a wintering or migrant species. This paper provides such a summary through the winter 1984-85. We believe that such summaries can increase our understanding of changing avian distributional patterns, especially as they become available for enough species to allow comparison.

Clapp et al. (1982:118) reviewed the record of occurrences of the Eared Grebe through 1978 for the coastal Southeastern States. For this report we have further extracted occurrence records from *American Birds* and regional journals from 1979 through 1985. Because most reports of the Eared Grebe in the Southeast are of wintering birds, we report our information in the terms of winter seasons, essentially from August of one year through May of the next. The few records of Eared Grebes from summer probably represent wintering individuals that failed to return to their breeding grounds. These birds may foreshadow breeding populations in the Southeast (Lowery 1974).

Maryland. There was no record of the Eared Grebe in Maryland in Buckley's (1968a) summary, and Maryland was not included in the report by Clapp et al. (1982). The species was first reported in Maryland in the 1966-67 season (Russell 1967), and next in 1971-72. Eared Grebes have been reported in eight of 18 winter seasons, with four separate reports in 1982-83. Four of the first five reports were from Ocean City, but there have been no reports from there since 1976. There is a single published photographic record (Blom 1981). Reported dates of winter occurrence in Maryland are 27 September to 28 April.

Virginia. The Eared Grebe was first reported in Virginia in the winter 1961-62. The second report was for 1964-65, and the third for 1965-66. The first specimen record, and the fourth report, was for 1966-67 (Buckley 1968a,b). Most reports are of single birds, with two individuals being the maximum noted at once. Virginia birds were reported from three localities in 1966-67 and in 1980-81, and from two localities in 1972-73; other reports are from only one locality per year. Nearly half of all reports and most of the

earlier ones are from Craney Island, Norfolk County, but the majority of recent records are from Chincoteague National Wildlife Refuge. Some of the records are from inland lakes rather than from coastal areas. The species has been reported at least once in 15 of 24 seasons since the initial report, and five of six winter seasons beginning with 1979-80. The reported dates of winter occurrence in Virginia are 16 August to 18 April.

North Carolina. The first Eared Grebe record in North Carolina was in 1964-65, the second in 1967-68, and the third in 1970-71. Records through 1978 were summarized by Clapp et al. (1982). From the time of the first record, birds have been seen in 12 of 21 winter seasons. Most reports are for single birds; occasionally two have been reported. Dates of reported winter occurrence in North Carolina are 7 October to 30 April.

South Carolina. The first record was for 1958-59. This was probably a vagrant individual rather than a precursor of an extension of range, because it predates other East Coast records by several years. The next occurrence reported was 1972-73, the third in 1974-75, and the fourth in 1980-81. Thus there are but four published records in a span of 27 winter seasons, or three in 13 seasons if the bird seen in 1958-59 is considered an early vagrant. Reported dates of winter occurrence in South Carolina are 13 January to 15 May.

Georgia. In this state the first Eared Grebe was reported in the 1978-79 season. Six birds were reported in 1979-80, two in 1980-81, and single birds in 1982-83 and 1984-85. Thus once the species was found in Georgia it was recorded in five of seven seasons. Dates of winter occurrence in Georgia are 18 August to 22 March.

Florida. The first Eared Grebe in Florida was reported in 1952-53, the second in 1956-57, and the third in 1958-59, all on the Gulf coast. On the Atlantic coast, however, the first was reported in 1956-57, the second in 1964-65, and the third in 1965-66. Throughout the state, there were at least 45 reports by 1979 (about 1.5 reports per year), indicating a rather widespread pattern of occurrence. Eared Grebes have been reported annually in Florida since 1970-71, with up to 20 individuals at a given locality and with several reports for most years. Reported dates of winter occurrence in Florida are 14 September to 23 May.

Alabama. The Eared Grebe was first reported in Alabama in 1959-60. Imhof (1976) and Clapp et al. (1982) summarized 21 reports, many from inland areas, through 1975-76, by which time the species was occurring regularly in the state. Most reports are of individual birds, the largest number seen being six. Dates of winter occurrence range from 12 August to 21 April.

Mississippi. The first record of the species in this state was in 1961-62 (Williams and Clawson 1963). Six reports from the coastal portion of the state were listed by Clapp et al. (1982), but the species is more common, and more frequently reported, inland than coastally. Eared Grebes have been seen annually since 1977-78. Most reports have been of one or a few birds, but larger numbers, up to 64 individuals, were seen at Hattiesburg in 1980. Wintering grebes have been reported from 13 August to 31 May.

DISCUSSION AND SUMMARY

The years of first reports of occurrence of the Eared Grebe as a more or less regular wintering bird in the coastal states of the Southeast are, except for Maryland, in a southward chronological progression: Maryland, 1966-67; Virginia, 1961-62; North Carolina, 1964-65; South Carolina, 1972-73; Georgia, 1978-79. Eared Grebes were

TABLE 1. Cumulative numbers of Eared Grebes reported by month¹, winters 1953-54 to 1984-85, in the coastal southeastern United States.

State	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY
Maryland	-	1	1	-	2	1	1	2	4	-
Virginia	2	1	4	6	8	4	3	4	3	-
North Carolina	-	-	1	-	10	6	4	5	4	-
South Carolina	-	-	-	-	1	2	-	-	-	1
Georgia	1	8	2	-	-	-	-	-	-	-
Florida	-	4	8	37	20	16	41	5	15	3
Alabama	1	1	1	-	7	7	3	1	3	-
Mississippi	9	2	-	55	85	18	60	68	-	7
Total	13	17	17	98	133	54	112	85	29	11

Percent Seen by Month

Southeast	2	3	3	17	23	9	20	15	5	2
Northeast ²	0	3	8	12	17	20	18	18	4	1

¹ Birds seen over a period of several months are listed each month they were present. Reports for which no date was given (e.g. "fall") are omitted. If number present was not stated, the report was assumed to be of one bird.

² Buckley 1968a

reported in Florida nearly a decade before they were found in other Southeastern States east of Louisiana, and were reported in both Mississippi and Alabama before they were found in Virginia. This may support Buckley's (1968a:536) suggestion that the wintering birds on the Gulf and Atlantic coasts may not be derived from the same breeding population. With isolated exceptions, however, the breeding range in North America seems to include only one nearly continuous population (A.O.U. 1983). The three banded grebes recovered in the East—two on the Gulf coasts of Alabama and Florida, the other at Niagara Falls, Ontario—had all been banded in Saskatchewan (Imhof 1976, Jehl and Yochem 1986). Thus, it is probably more correct to suggest that the Gulf and Atlantic coast birds merely represent extensions of the wintering range in two directions, one eastward from Texas across the Gulf Coast States and the other eastward from south-central Canada and the adjacent United States across the Great Lakes to the Atlantic coast and thence southward.

The timing of occurrence of wintering Eared Grebes in the Southeastern States (Table 1) is comparable to that reported for Northeastern coastal areas. In the latter area, Buckley (1968a) characterized the species as "normally appearing in November, occasionally in September or October, reaching its greatest numbers between December and early March, and then abruptly vanishing in late March." This summary applies almost equally well to the Southeast, where the now greater number of records suggests a somewhat wider period of winter occurrence.

We suggest that readers be aware that this paper discusses reports and records of occurrences of the Eared Grebe, not occurrences per se. We do not believe that first

occurrences are always detected or, conversely, that first reports always represent first occurrences. This is particularly a concern in areas where the number of potential observers is relatively low. We suggest that the relative paucity of reports from some states (Table 1) results from the relatively small number of observers in those areas. The correlation between the number of members of the American Birding Association (1984 membership list) in each state and the number of reports of Eared Grebes from the states is 0.78.

We have further attempted to distinguish between "reports" and "records," reserving the latter term for occurrences that are documented by a specimen or photograph. We do not necessarily reject undocumented ("sight") records, but we prefer to be able to verify occurrences many years after the fact. This precaution is particularly important where a species of similar appearance, in this case the Horned Grebe (*Podiceps auritus*), is known to occur abundantly in the area under consideration (Clapp et al. 1982, A.O.U. 1983). We also point out the possibility that some of the reports may eventually be considered unacceptable by state or regional records committees.

We further note that this summary has been prepared on the basis of published reports and records only. It is very likely that many observations of Eared Grebes in the Southeastern States have not been reported in the literature. This is less likely to be a problem with "first" reports of occurrence than with subsequent reports. Our study of the summary of published reports of occurrence suggests that once sightings become regular, they may no longer be reported. This might be the case either within a given year or on a year-to-year basis. Our analysis of Eared Grebe records, therefore, may be biased relative to the number of birds actually present in any year, the number of localities in which the species occurred in any year, or the number of years in which the species occurred in a given region. Another complicating factor is that observers tend to revisit certain favored localities, especially in search of a particular uncommon species, rather than to survey all possible localities equally well.

ACKNOWLEDGMENTS

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Biological Survey Section, National Ecology Center, U.S. Fish and Wildlife Service, National Museum of Natural History, Washington, D.C. 20560.

NEW CHECKLISTS

Checklist of North Carolina Birds, 1986, was published by the North Carolina Biological Survey. The list of 395 species officially recognized as occurring in the state and its adjacent offshore waters uses brackets to indicate species of provisional status, an asterisk for regular nesting, a plus for other categories of nesting, "I" for introduced species, and "E" for extinct species. Compiled by David S. Lee and Eloise F. Potter, the four-page list is based on the recommendations of the North Carolina Records Committee. An introduction explains the organization of the committee and the criteria for documentation of species new to the state. Copies of the list were distributed at the Fiftieth Anniversary Meeting of Carolina Bird Club, which was held at Raleigh, N.C., 1-3 May 1987. The new state checklist may be purchased from the North Carolina State Museum of Natural Sciences, P.O. Box 27647, Raleigh, N.C. 27611. The price is 25¢ each or 30 for \$5, plus 50¢ for postage and shipping. Make checks payable to the NCDA Museum Extension Fund.

Also released at the Fiftieth Anniversary Meeting was a checklist of the birds of the Raleigh area, which was compiled by Robert J. Hader and Harry E. LeGrand Jr. This pocket-sized list offers information on the seasonal distribution of the regularly occurring species. Published by the N.C. Biological Survey in cooperation with Wake Audubon Society, the Raleigh checklist is available from the N.C. State Museum. The price and ordering instructions are the same as for the state list.

Backyard Birding

... with Gail T. Whitehurst

Normal, Abnormal, and Unusual Feeding Habits

Many criteria are used to identify the new bird in the backyard or field. Field guides are undoubtedly the number one tool. Songs and call notes come second. Observation of feeding habits: what kind of food, where obtained and how, can be helpful. Is the bird eating insects, earthworms, seeds, fruits, rodents, small birds, fish, or shellfish? When on a feeder, is it eating seeds, suet, or paste? Is it feeding on the ground, on the trunk of a tree, high in a tree, or while flying in the air? Noting the physical adaptations of the bird—what kind of bill, feet, and toes—gives valuable clues. For instance, warblers and other small, insect-eating birds have small thin bills for poking into cracks and crevices, snatching bugs from under leaves, and pulling tiny worms from their hiding places. Seed-eaters tend to have heavy, conical bills for cracking the toughest of seeds. Feet are adapted to give maximum benefit in finding and obtaining food. There are webbed toes for water birds; heavy, supportive toes for the running ground feeders; strong, slender toes placed with three forward and one back to enable the perching birds to grasp the slenderest twig or stalk of grain; and the two toes forward and two toes back for climbing up and down the trunks of trees.

We backyard birders have, in a sense, domesticated our birds. We provide feeders and food not normally found in the wild. We offer birds seeds and fruits that do not normally grow naturally in our area, such as sunflower seeds and oranges. We put up suet, provide pastes of cornmeal and peanut butter, and scatter cake and bread crumbs about. They “learn,” in the absence of plentiful natural foods, to eat foods that are a far cry from the norm. Even so, for the most part, we tend to find that seed-eaters stay with the seeds while insect- and fruit-eaters prefer suet, pastes, and oranges. Those large, omnivorous birds such as Blue Jays, crows, starlings, and grackles—and House Sparrows, will take anything that is edible.

Just when the birder thinks he has the feeding habits of birds well in mind, along comes a bird eating something that surprises us. We have come across a number of these instances and feel they are worthy of note. Some are really unusual. Others are uncommon, or perhaps very natural but infrequently observed.

Those who are familiar with hummingbirds at sugar-water feeders and flower beds may assume that their diet consists only of sweet liquids. This food supplies the much-

needed energy for these active little creatures, but they also need protein. They get this from tiny insects within the flowers, but we seldom see this feeding behavior. Kitty Kosh of Wilmington, N.C., observed a Ruby-throated Hummingbird hawking gnat-sized insects about the trunk of a pine in August 1985. It must have been quite a sight—one this writer has never seen. Have you?

Another observation Mrs. Kosh made later—in December—was of a Northern Oriole perched on the hummingbird feeder with a beak thrust into the feeding hole, drinking the solution. A pretty neat trick considering the size of the oriole. But that is not all she saw. The oriole took a liking to thistle seeds and was seen partaking of these with apparent gusto. Mrs. Kosh also saw a Carolina Chickadee sipping sugar water from the hummingbird feeder. This reminded me that some years ago Martha Frederick of Tryon, N.C., reported that a Tufted Titmouse had developed a taste for sweets. Many years ago I was told about a Yellow-throated Warbler coming regularly to a hummingbird feeder. Perhaps this seems unlikely until one considers what these same species do under natural circumstances. Several years ago, a Yellow-bellied Sapsucker had worked diligently placing his ring of holes into a hickory tree in our backyard. As the sap began to rise and flow in early March, we heard him putting up quite a clamor. Investigating the cause of his agitation, we discovered a Northern Oriole, clinging to the bark of the tree and feasting on the sap as it oozed from the sapsucker's holes. Subsequent observation from time to time revealed that other species had followed suit. We noted that there were Yellow-rumped Warblers, Pine Warblers, a Carolina Chickadee, a Ruby-crowned Kinglet, Red-breasted and Brown-headed Nuthatches, a Downy Woodpecker, a Tufted Titmouse, and (more surprisingly) a Dark-eyed Junco feeding on the flowing sap. The junco was unable to maintain his hold on the slippery bark and soon gave up his attempts. As often happens, in the bird world, birds watch other birds; when they see others feeding, they will give the new food a try.

Another instance of orioles, this time Orchard Orioles, feeding on a natural sweet, nectar, comes from an article published in *The Chat* in 1980 by Joseph M. Wunderle Jr. He had observed the orioles getting nectar from the blooms of Trumpet Creeper vines. They did not thrust their bills inside, as hummingbirds do, but used them to slash openings at the base of the flower.

We recalled that flowers or flower buds are often on the menu for certain species on a regular basis. We have noted Northern Mockingbirds and Northern Orioles eating the whole flowers of yellow crocus. Cedar Waxwings are frequently seen gobbling the buds and flowers of fruit trees, especially the flowering crabapple. The waxwings and Purple Finches often ate the buds from Sweetgum trees and lilac bushes. We have found Evening Grosbeaks devouring the buds of maples and elms. We wondered about the food value of flowers and then recalled that the pollen therein is all protein—the agent that brings so much suffering to victims of hay fever.

Getting back to some of the more unusual feeding habits of birds at the feeders, we discovered insect- and fruit-feeding birds eating sunflower seeds. Our own notes tell of Northern Orioles, in late winter, pushing aside the Purple and House Finches on a feeder and eating the sunflower seeds. One male I observed used his toes to put the seeds into his mouth; closer watching revealed that he was eating only the seeds that were out of the shell. During the same period that year, we saw a Carolina Wren in the feeder helping himself to seeds. Both birds used their thin, sharp bills to hold the finches at bay.

On the other side of the coin, we have found seed-eaters making use of the suet feeders. When Pine Siskins were abundant, and, shortly before time for them to leave in the spring, they would be seen perched on a suet feeder, gathering fat to sustain the long flight north. This winter (1986) on a very cold morning, we noted an American Goldfinch eating a small amount of suet.

Not all birds come to feeders, no matter what is being offered. Others come only rarely. Golden-crowned Kinglets are among the rare visitors. I have seen them pick off tiny bits of suet deposited on branches near a feeder by woodpeckers wiping off their beaks after feeding. One winter we had a small flock of four kinglets that fed rather regularly on a mixture of grits and bacon drippings, which had been plastered on the trunk of a tree to make feeding easier for the woodpeckers. In this instance, the Golden-crowns were attracted to the food after seeing one Ruby-crowned Kinglet, two Brown Creepers, and a number of Yellow-rumped Warblers eating it.

Jim Boozer, of Brevard, N.C., watched a female Summer Tanager eating black oil sunflower seeds late last summer. He timed the bird's ability to open and eat a seed, finding it took her 14 to 15 seconds as compared with only 4 to 5 seconds for an Evening Grosbeak or Purple Finch. The finches crack open seeds with their strong beaks and flick the inside into their mouths with their tongues. Mr. Boozer did not say how the tanager went about opening the seed. We have noted that the chickadees and titmice open a seed by holding it with the toes of one foot and pecking the seed. Blue Jays do this also. Brown Thrashers place the seed on the ground and hammer it with their long bills. Nuthatches and woodpeckers place the seed in a crack in the bark of a tree and peck it open.

This winter we have had one of those hanging redwood "stick" feeders—the kind with holes bored through it. We have kept it filled with a paste of cornmeal and peanut butter. It was intended for, and used by, the small birds such as chickadees, titmice, nuthatches, and Downy Woodpeckers. However, of late, a pair of American Robins and a Northern Mockingbird have discovered the feeder. At first they picked up the crumbs that fell as one of the small birds ate. Then, in their eagerness to get more food, they began trying to perch on, or peck at, the feeder. At first they were only able to peck the food loose and pick up whatever dropped to the ground. Later on, all three were landing on top of the feeder and bending heads down to eat directly from it. The mocker seems to be more successful at maintaining his grip and balance than the robins. And, if you know mockingbirds, this one has claimed the feeder as his own and chases the robins away whenever he sees them. The smaller birds still try to slip in when the mocker is away.

How about it, readers? Surely many of you have seen some out-of-the ordinary bird behavior in your own backyard. Won't you share your experiences with us?

Dancing Heron Outfoxes Gulls!

In the fall of 1985, while walking along the ocean beach, a few yards south of Topsail pier, we noted a gathering of gulls and one lone Great Blue Heron. A fisherman had just thrown out a pile of fish which he had filleted—leaving the heads and backbones and tails all in one piece. The gulls, including Herring, Ring-billed, Laughing, and two Great Black-backed, were squabbling and hassling each other to get at the spoils. This in itself is not unusual. However, seeing the heron in their midst was. While wondering what his

(Continued on Page 56)



Roundtable

... with Louis C. Fink

A Frenzy of Waxwings

I have been a birder for over 40 years, and on 22 February 1987 I saw the largest flock of Cedar Waxwings (*Bombycilla cedrorum*) that I have ever seen. As I left the parking lot of the Methodist church in Edenton, N.C., I saw an enormous flock of waxwings wheeling over a grove of trees across a field from the church. I drove over and parked in the grove and observed them for several hours. The birds were resting in the tops of several cypress and oak trees; every 15 minutes or so they would fly down into several big Red Cedar trees and feast on the berries. Actually, it was more of a "feeding frenzy" than a feast; they hung from the branches by the hundreds, some upside down, gobbling berries frantically. At the height of the activity I estimate that there were more than 2000 birds present. Small flocks of 30 to 100 were constantly leaving and heading north while other flocks were dropping from high in the sky to the south and joining those resting and feeding. During the 2 hours I estimate I saw more than 4000 Cedar Waxwings. Shortly after I left at 12 noon, it commenced to rain, and the rain lasted all afternoon and into the night. There was also a constant trickle of Common Grackles and Red-winged Blackbirds going over headed north, so I suspect that these birds were all going north just ahead of a weather front.—PARIS R. TRAIL, Routh 4, Box 268-A, Edenton, N.C. 27932

Are Starlings Really Responsible for the Decline of the Red-headed Woodpecker?

As I have previously stated (Chat 47:98), I watched European Starlings usurp nesting cavities of the Red-headed woodpecker at Berryville, Virginia, in 1922 and at Chapel Hill, N.C., from 1927 until the early 1950s. In the late 1940s I stood up in a Chapel Hill Bird Club meeting at the home of Adelaide Walters and said that starlings were ousting Red-headed Woodpeckers from their nest cavities in Chapel Hill. The instant I sat down Richard Weaver said there was nothing to what I had said. That has been the reaction I have received when I communicated on this subject with others, including my old friend Gene Odum, George A. Hall of West Virginia University, Roger Tory Peterson, Herbert W. Stoddard, and the people at the Cornell Laboratory of Ornithology.

Mr. Peterson was the only one to admit that I may be right. He brought up a question I could not answer at the time. He wondered why the Red-headed Woodpecker had

almost disappeared in New England and other parts of the East while the Red-bellied Woodpecker had extended its range in New England and was thriving elsewhere in the eastern United States. Now I believe I can answer Peterson's question.

In the spring of 1986 I had a Red-bellied Woodpecker nesting cavity under close and constant observation. From March to May I shot and killed 60 starlings, sometimes as many as three in a single day, at this one woodpecker hole. Unlike the Red-headed Woodpecker, the Red-bellied never engaged the starlings in combat. The female did not take any part in opposing them. The male, when a starling went in the hole, just hopped around near it, sounding a disagreeable distress note that often alerted me to the starlings' presence. Sometimes the male woodpecker would fly to the hole and look in briefly.

With me constantly on hand to shoot the starlings, the Red-bellieds continued to try to nest and had actually laid eggs by mid-May. On 24 May I had to be away from home. When I returned, the eggs were on the ground under or near the nest tree, an old English Walnut. The pair then went elsewhere.

The behavior of the Red-bellied Woodpecker under these circumstances was entirely different from that of the Red-headed Woodpecker, which fights the European Starling to the death (literally), and it is always the woodpecker that is defeated. Often the Red-headed Woodpecker is killed during combat or so badly crippled that it dies later. I have seen this happen and have picked up the dead woodpecker. The difference in behavior allows the Red-bellied Woodpecker to survive and try nesting elsewhere, a second chance often denied the more aggressive Red-headed Woodpecker.

One ornithologist wrote me that Red-headed Woodpeckers are so aggressive that it is doubtful if a bird the size of a European Starling could do anything with them. He failed to understand that the Red-headed Woodpecker's aggressiveness is the very thing that has doomed it.

I am now 80 years old, and I have watched Red-headed Woodpeckers since I was a youngster in Berryville. They were one of our commonest nesters before the arrival of starlings more than 60 years ago. In the spring I loved to watch Red-heads as they flew through the trees sounding their joyful cries. Now they are all gone, and the starlings are everywhere in force. The fact that I killed 60 starlings at one woodpecker hole in a few weeks gives some idea of their overpowering numbers that far exceed the supply of suitable nest sites. The rural oak groves, oak-lined streets, and oak-shaded city parks where Red-heads once nested in abundance are still found throughout the Southeast. Sadly, nesting Red-headed Woodpeckers are not.—JOE JONES, Route 2, Box 4195, Berryville, Virginia 22611

The above account prompted me to search for additional evidence that European Starlings kill and injure Red-headed Woodpeckers or that starlings are otherwise directly responsible for the decline of that species.

Bent's *Life Histories of North American Woodpeckers* (1939) mentions competition between starlings and flickers, but not between starlings and Red-headed Woodpeckers. The Bent volume that includes the European Starling came out in 1950. It mentions several accounts of adult flickers being killed by starlings, but only one instance of a starling attacking a Red-headed Woodpecker.

In *Birds Around New York City* (1942) Allan D. Cruickshank concluded that much of the starling's bad reputation is "unfounded." Nonetheless, Olin S. Pettingill Jr. in his

Ornithology in Laboratory and Field (fourth edition, 1970, p. 202) uses the European Starling and the Red-headed Woodpecker as an example of how the range extension of one species may cause the decline of another.

The Red-headed Woodpecker account in Robert M. Mengel's *Birds of Kentucky* (Ornithological Monographs No. 3, 1965, p. 298) says: "While it is probably more numerous now than in primeval times the species has undergone a notable decrease in numbers in recent years, especially the last two or three decades Prior to about 1935 nearly all local authors either stated or implied that this was the commonest of woodpeckers, which is clearly no longer the case anywhere in Kentucky. Various reasons put forth to account for the decrease include creosoting of telephone poles, highway mortality (to which the species seems peculiarly susceptible), and the invasion of the Starling While no one, or probably not all, of these explanations may be adequate, it does seem worthy of note that the decrease in Kentucky coincided with the establishment of the Starling, as it did also, somewhat earlier, in Ohio"

Several recent studies of breeding Red-headed Woodpeckers (A.W. Reller, *Amer. Midl. Naturalist* 88:270-290; J.A. Jackson, *Condor* 78:67-76; Lawrence Kilham, *Auk* 94:231-239) mention competition between individuals of the same species as well as between Red-headed and Red-bellied Woodpeckers, but there was no reference to starlings as intruders. Perhaps the presence of the observers kept the wary starlings away from the nest holes.

Evidence that the European Starling was and is a primary cause of the decline of the Red-headed Woodpecker comes from a publication released in 1986 by the U.S. Fish and Wildlife Service, *The Breeding Bird Survey: Its First Fifteen Years, 1965-1979* by Chandler S. Robbins, Danny Bystrak, and Paul M. Geissler. On page 87 the authors state that the starling population showed a 14-year decrease in Canada and the Northeastern States, but there was no detectable continentwide change. The report indicates that the starling population is still increasing in the Southeast and in most regions west of the Mississippi River, but declining in that portion of the East where the species first became established. On page 34 the authors note that the Red-headed Woodpecker experienced a significant increase in the Northern Plains States and the Northeastern States, apparently in response to decreased pressure from starlings.

Those of us who live in the Southeast can only hope that the European Starling population will soon peak in our region and begin a natural decline that will permit the Red-headed Woodpecker to nest again in Joe Jones's oak grove.—EFP

CBC Rare Bird Alert Phone Number
704/875-2525

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Common Loons Wintering in Offshore Waters

DAVID S. LEE

North Carolina State Museum of Natural Sciences
P.O. Box 27647
Raleigh, N.C. 27611

Between 1975 and 1986 I have had the opportunity to observe Common Loons (*Gavia immer*) far at sea off the North Carolina coast. Many of my records are of spring migrants ($N = 98$), but some additional individuals ($N = 35$) found during the winter months were assumed to be winter residents. Although individuals were encountered regularly, at no time did the species appear to be common far offshore, except perhaps during spring migration. No Red-throated Loons (*G. stellata*) were seen offshore at any season during the 11-year study period. My sightings were made mostly at distances between 20 and 35 miles (32-56 km) from shore and in waters of 20 to 500 fathoms in depth. Regular occurrence far at sea was not expected. Cramp and Simmons (1977), for example, stated that Common Loons remain within a few kilometers of shore throughout most of their winter range. Clapp et al. (1982) noted: "Common Loons in winter are normally marine but remain within a few kilometers of shore. They regularly use enclosed harbors and inlets. Bent (1919) referred to groups of wintering loons sometimes far out at sea; but this does not seem to agree with most recent observations." Most researchers studying offshore faunas in the southeastern United States to date have not discussed loons. Rowlett (1980), however, does indicate 0.1 to 1.0 Common Loons per hour in deep waters (40-500 fathoms) of the Northern Chesapeake Bight in February, April, and May. Studies on wintering Common Loons are few (e.g. McIntyre 1978) and were conducted in sounds and along beach fronts.

Table 1 provides information on the number of Common Loons encountered at different depths off the North Carolina coast during my offshore studies. A rough calculation of density of birds seen in deep water is 0.341 per hour for 19 winter trips. This falls within the range found by Rowlett (1980) off the Maryland coast.

Off the coast of North Carolina, wintering and migrating Common Loons were solitary. Swimming birds avoid boats by diving, and pursued individuals never took flight. In avoidance dives birds would typically resurface 40 to 50 yards from the point where they were last seen, and on several timed instances remained submerged for 3.0 to 3.5 minutes. Because loons are poorly designed for flight and have high wing-loading ratios

TABLE 1: Dates of occurrence for Common Loons seen more than 15 miles off the northern North Carolina coast. No loons were seen at sea between 30 May and 4 December in 62 survey trips. Of the 126 survey trips made, 19 were in winter and 43 were in spring.

Date	Number	Activity	Water Depth in Fathoms
5 Dec. 1985	2	flying	400
20 Dec. 1984	2	swimming/diving	100
28 Dec. 1984	1	flying	20
30 Dec. 1978	1	swimming/diving	40
22 Jan. 1986	3	swimming/diving	600-700
27 Jan. 1983	1	swimming/diving	15
14 Feb. 1987	2	swimming	200-300
17 Feb. 1986	6	swimming (1 flying)	40-80
3 Mar. 1984	4	swimming	40-100
16 Mar. 1984	9	swimming	15-100
26 Mar. 1981	4	swimming	15-18
27 Mar. 1985	1	swimming	15
2 Apr. 1981	3	swimming/diving	40-500
2 Apr. 1984	3	swimming (1 flying)	15
4 Apr. 1980	2	not recorded	?
18 Apr. 1983	3	all flying north	15
18 Apr. 1980	11	flying/swimming	50-70
19 Apr. 1980	51+	flying north	15
28 Apr. 1983	1	swimming/diving	500
29 Apr. 1980	1	swimming/diving	28
8 May 1980	2	swimming/diving	20-500
10 May 1980	11	flying north	15-100
14 May 1981	3	flying north	15-20
18 May 1977	2	flying north	15-20
19 May 1982	2	flying north	15-35
22 May 1980	2	flying north	50-100
29 May 1980	1	not recorded	20

(Savile 1957), escape by flight is certainly more energetically costly than swimming and diving. In winter Common Loons were never observed in flight, and in fact, individuals exhibit a complete and simultaneous molt of primary feathers during the winter (late January through February) and are unable to fly (Woolfenden 1967, pers. observ.). This suggests that birds found far at sea during the winter probably remain there and are not simply making excursions out to sea for brief periods. Woolfenden (1967) discussed the significance of postmigratory simultaneous wing molt in Common Loons.

Normally North Carolina birds were not associated with current edges, schools of surface-feeding fishes, or other seabirds. During the loons' period of flightlessness such associations would normally not be possible. However, on 22 January 1986, three solitary Common Loons were found along a tide line in which large mats of sargassum had accumulated. This tide line was more than 9 miles (15 km) in length and followed a

contour of approximately 600 to 700 fathoms. Two were found feeding in water 200 to 300 fathoms deep on 14 February 1987. The birds were associated with various other seabirds foraging among schools of False Albacore (*Euthynnus alleleratus*) along a small current edge. Because of these associations with current edges, I suspect loons (like other marine birds) are attracted by potential prey associated with these marine fronts. Because of their flightlessness, it appears that loons must be transported passively to areas of current edges by the currents themselves, much like wood and other debris that accumulate along current lines. Haney and McGillivray (1985) provided evidence for the distribution of marine birds along these fronts and explained their potential for increased productivity near the ocean's surface. The Common Loons encountered on these lines would therefore appear to be foraging at some moderate depth in the water column rather than on the floor of the ocean. Dives by Common Loons to depths of 180 to 200 feet have been reported (Schoryer 1947), but it seems improbable that they are feeding on or near the bottom at water depths of 500 fathoms (3000 feet). The two specimens I collected had empty stomachs, but this is not significant because most marine birds regurgitate prey items during the process of collection. I do not believe Common Loons wintering far offshore are fasting because weights of those obtained at sea seemed normal (3588.0 ± 58.0 grams).

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Long-legged Pink Things: What are they? Where do they come from?

DAVID S. LEE

N.C. State Museum of Natural Sciences
P.O. Box 27647, Raleigh, N.C. 27611

Pearson et al. (1942), Sprunt and Chamberlain (1949), and the American Ornithologists' Union *Check-list* (1957, 1983) consider the records of Greater [American] Flamingo¹ in the Carolinas as naturally occurring vagrants. The primary South Carolina records are ones provided by Audubon (1840-1844) and Wayne (1887). The Audubon record is somewhat vague. "A very few of these birds have been known to proceed eastward of the Floridas beyond Charleston in South Carolina, and some have been procured there within eight or ten years back." Wayne's record is of a young, storm-driven male killed on DeBardien Island in September 1876. The specimen was not saved. Sprunt and Chamberlain (1949) cite an apparent "tongue in cheek" news clipping from the *Charleston Courier* on 20 July 1818 providing evidence of an even earlier record. It states, "We hope that they [other migrating birds] will meet with better reception than the unfortunate flamingo who recently paid us the honor of a visit from South America, but before he arrived in the metropolis, was slain at John's Island by a man who mistook him for a British soldier." The news article states that the bird was placed in the Charleston Museum, but by 1949 there was no record of its existence. Other records of flamingos available for South Carolina are provided in Table 1.

In North Carolina the earliest record was made by the manager of the Pea Island Refuge, Samuel A. Walker, of two birds he saw on the beach on 23 June 1937 (Chat 1:61). Subsequently there have been a modest number of additional records of flamingos in coastal North Carolina (see Table 1).

It is interesting to note that in every instance the birds in question are credited to be the Greater Flamingo (*Phoenicopterus ruber*), although in every written account there is a complete lack of supporting details that describe any of the birds. The single exception is Ames (1965), who notes the bird he saw was "very pink." It is therefore safe to surmise that in each case the specific identification was based entirely on geographic probability.

With the above in mind, it is informative to note the two North Carolina records for which we have photographic evidence. In both cases the birds are not the expected American Flamingo of northern South America, the Antillies, and the Bahamas, but the Chilean Flamingo (*P. chilensis*). Six colored photographs supplied to me by Charles Peterson of Richlands, N.C., are clearly of the pale-plumaged, pink-kneed Chilean species (Fig. 1). This bird was photographed between 5 and 25 February 1986 near New River Inlet, Onslow County, N.C. James Parnell re-examined his photograph of a North Carolina flamingo that he took nearly 10 years before in the same area and discovered that it, too, was the Chilean species. Based on location, perhaps it is even the same individual.

¹The revised AOU name is somewhat misleading in that combining the Old World *Phoenicopterus roseus* as a race of the New World *P. ruber* blurs for many the fact that the two populations are quite distinctive. Both are now labeled Greater Flamingos. Although not all authors are in agreement concerning this combination, *P. ruber*, *roseus*, and *chilensis* are clearly of close affinity.

This discovery of a "second" species of flamingo in the Carolinas raises several questions, most of which cannot be answered with certainty. Are the birds simply escaped individuals from captive stocks? This cannot be determined, but it is unlikely that the pre-1900 South Carolina records are of captives. The gale-driven bird reported by Wayne (1887), for example, was almost certainly wild. With the documentation of the Chilean Flamingo in the area, how do we deal with earlier records of the American Flamingo? Ames's (1965) bird was reported as very pink, suggesting his bird was not the Chilean species. However, this alone is not the criterion with which we can allow any species on a state list. Furthermore, to someone not familiar with flamingos, even adults of the Chilean species could be considered as very pink.

While it at first seems absurd to consider that Chilean Flamingos in North Carolina may be wild, this needs to be thought through. Many of the recent records, including the ones we know to be Chilean birds, are from winter and spring, a time of year that seems backwards from that when one would expect a southern hemisphere species to be moving northward. Backwards may be the operative word. Mark (1984) discussed the role of "mirror-image" navigational error in migrating birds. South American species such as Variegated Flycatchers (*Empidonum varius*), Fork-tailed Flycatchers (*Muscirora tyrannus*), Tropical Kingbirds (*Tyrannus melancholicus*), Streaked Flycatchers (*Myiodynastes maculatus*), and Large-billed Terns (*Phaetusa simplex*) have all been recorded from North America (Abbott and Finch 1978, McLaughlin 1979). Most of these North American records are of fall/winter temperate migratory South American birds including the "Tropical" Kingbirds seen in the Carolinas in 1985 (North Carolina: 1985 Christmas Bird Count, Amer. Birds 40:270; South Carolina: Lee and Horner in press). Although the precise taxonomic identity of the two Carolina Tropical Kingbirds was not determined, a bird from Scarborough, Maine, taken early in this century was *Tyrannus m. chloronotus*, a migratory South American race. In that the Chilean Flamingo is migratory, moving south in the austral spring to its major breeding areas, some North American records may be the result of "mirror-image" navigational error (i.e. birds moving north in our fall). Along the same line, escaped individuals displaced in North America could likewise exhibit similar navigational error and be moving north in our fall.

Ryan (1979) summarized information on known captive flamingos in this country. At that time there were 417 Greater [American], 266 Chilean, 24 Greater [Eurasian], 26 Lesser (*P. minor*), 22 Puna (*P. james*), and 7 Andean Flamingos (*P. andinus*) in the United States as well as an unknown number of unmonitored birds. Of all the monitored birds, only one bird, a Chilean Flamingo in Orlando, Florida, has been reported as missing since 1974. This information is interesting in that it indicates a tremendous potential for occurrence of exotic birds in the wild; but the majority of the captives are pinioned, and there is no evidence that a significant number of captives are escaping. I have chosen not to attempt to summarize records of flamingos from other adjacent areas in that (1) they will provide no evidence one way or another to the problem of origin and (2) most records have the same problem as the Carolina ones, namely there is no way to be certain which species is involved.

Examination of the dates of occurrence of flamingos in the Carolinas is also informative. Combining all records, there are two distinct periods in which the birds are showing up on our coast—4 November through 25 February (with an additional record for an unknown date in March) and 10 June through 1 August (1 September if the storm-driven

TABLE 1. Flamingo records for the Carolinas.

Date	Locality	Source	Remarks
1818	near Charleston, S.C.	Sprunt and Chamberlain 1949	
pre-1840	N to Charleston, S.C.	Audubon 1840-1844	
Sept. 1876	near Charleston, S.C.	Wayne 1887	storm driven
June 1935	Pea Island, N.C.	NCSM records	2 birds for several days
23 June 1937	Pea Island, N.C.	Pearson et al. 1942	2 birds
6 July 1951	Buxton, N.C.	NCSM records	5 birds
5-14 Dec. 1964	Pea Island, N.C.	Ames 1965	
12 Nov. 1969	Pea Island, N.C.	NCSM records	present for 3 days
March 1972	Pea Island, N.C.	NCSM records	2 reports
4-24 Nov. 1972	Pea Island, N.C.	Chat 37:29	through 27 Nov. (Pea Island reports)
9 June 1977	Bird Island N of Bull's Island, S.C.	Chat 42:16	2 birds
30 July-1 Aug. 1977	Morris Island near Charleston, S.C.	Chat 41:52	2 birds, photo (Fig. 2); both <i>P. chilensis</i>
8 May 1977	Morris Island near Charleston, S.C.	Chat 41:98	
12 June 1978	Ocracoke Inlet, N.C.	Chat 43:22	
winter 1978-79	Pea Island, N.C.	Chat 43:70	present throughout winter
10 June 1980	near Ocracoke, N.C.	Chat 45:20	
15-22 July 1980	Morgan Island, N.C.	Chat 45:20	
26 July 1980	Cedar Island, N.C.	Chat 45:20	
13 May 1981	Cape Island, S.C.	Chat 45:105	2 birds
5-25 Feb. 1986	near Topsail Island, N.C.	NCSM records	photo of <i>P. chilensis</i> (Fig. 1)
7 Jan. 1986	near Topsail Island, N.C.	J. Parnell	sight report of <i>P. chilensis</i>



Fig. 1. A Chilean Flamingo was photographed in February 1986 in New River Inlet, N.C. The dark knee joint (red in life) and pale back are diagnostic. (Photo by Charles Peterson)

bird is included). Two of the winter records are photographs, and both are of *P. chilensis*. The summer records have a single photographic documentation, and it is not of the Greater Flamingo, as I expected, but also of *P. chilensis* (Fig. 2). Could it be that this species is moving into the Carolinas at different seasons because of innate programming that evolved in a different hemisphere? Do we have only this one species presently visiting the Carolinas on a regular basis? Were the pre-1900 birds Greater Flamingos? While flamingos recorded in the Carolinas in modern times should certainly be regarded as exotics, there are still some interpretive problems. If one considers the semi-domestic breeding birds in south Florida as a major source of vagrants in the Southeast, I do not know how these birds should be categorized. Greater Flamingos nested in the Florida Keys until at least 1938 (Sprunt 1954). Should free-flying, reproducing Greater Flamingos be regarded as a native restocked population? Restocked Peregrine Falcons (*Falco peregrinus*) raised from captive stocks of various genetic origins are, and will be, considered as wild native birds. The Chilean Flamingo, like other large flamingos, is a strong flyer and is equally capable of reaching North America as a naturally occurring South American migrant. Furthermore, its period of occurrence is more or less what would be expected if the birds do on occasion come to North America on their own power as a result of "mirror-image" navigational errors. Unfortunately, escaped captives certainly must account for some (and probably all) of the records of this species in North America, and they could quickly mask



Fig. 2. The Chilean Flamingo caught in flight above is one of two such birds photographed near Charleston, S.C., in the summer of 1977. The dark knee joint (red in the colored slide) is apparent on both birds. (Photo by Pete Laurie)

a pattern emerging from records of truly wild birds, whatever the species. Additionally, patterns of occurrence, if they exist, are further corrupted by field workers' failing to identify more than one species of bird.

At present there is little point in arguing the origin of free-flying flamingos. While a reservoir of captive birds provides a logical explanation of source, natural and semi-natural sources cannot be entirely ruled out for one or both species. Furthermore, even if one maintains that all contemporary occurrences of flamingos are from captive stocks of exotics, the birds themselves now appear to be regular, though uncommon, visitors to the Carolinas. As such, their specific identity, location, and seasons of appearance deserve documentation, and bird students should be encouraged to report sightings. We can anticipate, but not predict, future usefulness of cumulative records. For example, the early North Carolina record of a Smooth-billed Ani (*Crotophaga ani*) was naturally assumed by Pearson et al. (1942) to be of an escaped captive, but subsequent information from neighboring areas now indicates that this was probably not the case, and the state's records committee has re-evaluated the status of this species. Although state records committees find it necessary to withhold birds of questionable origin from official state lists, provisional (hypothetical) status does not make such species any less interesting subjects of study. Perhaps future students will conclude that the increase in local flamingo records is a result of the currently revived fashion of setting out pairs of decoys in front yards.

Acknowledgments. I thank Charles Peterson and James F. Parnell for providing photographs of the North Carolina birds and Pete Laurie, S.C. Wildlife and Marine Resources Department, for allowing me to examine his photographs of the South Carolina birds.

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American Swallow-tailed Kite Nesting in Hampton County, S.C.

JOHN EMMETT CELY

South Carolina Wildlife and Marine Resources Department
P.O. Box 167, Columbia, S.C. 29202

On 28 May 1985 an American Swallow-tailed Kite (*Elanoides forficatus*) nest was found at the Webb Wildlife Center, Hampton County, S.C. The Webb Center is a 2346-ha state-owned tract of open pinewoods and bottomland hardwoods adjacent to the Savannah River. The nest with sitting bird was in a 5-ha Loblolly Pine (*Pinus taeda*) stand surrounded by a Laurel Oak (*Quercus laurifolia*) and Switch Cane (*Arundinaria gigantea*) flat interspersed with Overcup Oak (*Q. lyrata*) and Swamp Tupelo (*Nyssa sylvatica* var. *biflora*) sloughs. Three small fields totaling 4 ha occurred within 300 m of the nest. The nest was 390 m from the Savannah River swamp bottomland and 1.3 km from the river itself. The nearest water was an oxbow lake 390 m away.

The nest was near the top of a 36-m Loblolly Pine (52 cm DBH). The pine stand had been thinned to a basal area of 11.5 m²/ha several years previously. A seldom-traveled

woods road is 52 m from the nest tree. A Mississippi Kite (*Ictinia mississippiensis*) nest, which fledged one young, was in another pine 72 m from the Swallow-tail nest. The Swallow-tail nest fledged one young about 15 July.

This is the first nesting record for the Swallow-tailed Kite in Hampton County, although Swallow-tails were former breeders in the Savannah River coastal region (Murphey 1937). A review of Swallow-tail sightings suggests partial reoccupation of historical range in this area after an absence of several decades. Murphey (1937) noted that Swallow-tails disappeared from the Augusta area after 1919. Hamilton (1964) made no mention of Swallow-tails from Screven County (Georgia) on the Savannah River midway between the coast and fall line. Her observations spanned 1937 to 1964. Ivan Tomkins made periodic trips on the Savannah River from Augusta to Savannah during the 1940s and 1950s, apparently without noting Swallow-tails. R.A. Norris worked at the Savannah River Plant (SRP) between 1955 and 1958 without reporting Swallow-tails (Norris 1963). The SRP is on the South Carolina side of the Savannah River and slightly to the northeast of Screven County.

Except for two isolated sightings at Augusta in July 1938 (Murhey 1938) and May 1943 (Thomas 1943), consistent reports of American Swallow-tailed Kites from the coastal Savannah River started during the 1960s after an apparent 40-year hiatus. One kite was seen near the mouth of the Savannah River at Jasper County, in April 1961 (Chamberlain 1961). Baker (1966) reported two Swallow-tails from upper Screven County in July 1965, apparently the first kites seen in this area since 1943. A Swallow-tail was reported from Augusta on 30 July 1967 (Rial 1967) and another on 31 May 1969 (Knighton 1970). Several Swallow-tails were seen at Augusta in company with Mississippi Kites in early July 1973 (Teulings 1973), and three were seen on 20 July 1975 (Swiderski 1975).

Lewis Rogers, who has been at the Webb Center since 1969, saw his first American Swallow-tailed Kite there in the late 1970s. Rogers (pers. comm.) feels that Swallow-tails are gradually increasing in this area. He reported 19 Swallow-tails in a flock at the Webb Center in early May 1985. In 1985 Jim Geddes (pers. comm.) found Swallow-tails (up to 6) between river km 284 and 152 (Screven, Allendale, and Hampton Counties). During the spring of 1986, sturgeon biologists working the Savannah River from river km 214 (adjacent to the Savannah River Plant) to the coast found kites between river km 152 and 141 (Screven and Allendale Counties) and between river km 82 and river km 51 (Effingham and Jasper Counties) (Lamprecht and Green, pers. comm.).

The Hampton County nesting site is approximately 160 km SW of the nearest known kite breeding population in South Carolina, the Francis Marion National Forest. However, a nesting population may occur halfway between these locations at the Edisto River near Cottageville, Colleton County. Frank Cuthbert (pers. comm.) reported up to 10 Swallow-tails here during the early 1980s, and one bird was seen carrying moss and twigs.

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Adult Male Rufous Hummingbird Photographed in North Carolina

HENRY D. HABERYAN
Bluff Road, Cedar Point
Swansboro, N.C. 28584

HARRY E. LeGRAND JR.
331 Yadkin Drive
Raleigh, N.C. 27609

About midafternoon on 2 September 1985, an adult male Rufous Hummingbird (*Selasphorus rufus*) appeared at a hummingbird feeder in the yard of the Henry Haberyan residence at Cedar Point, Carteret County, N.C. Numerous Ruby-throated Hummingbirds (*Archilochus colubris*) of both sexes had been present at this location since mid-April, and they offered excellent opportunities for comparison with this new bird. The differences, including the larger size of the Rufous, were readily apparent. The Rufous Hummingbird was a fully adult male, as evidenced by a rusty-orange back without any green, which would have been present on an immature Rufous, an adult female Rufous, or an Allen's Hummingbird (*S. sasin*) in any plumage. The rusty orange was also noted on the sides, flanks, and under-tail coverts. The gorget was orange-red with striking iridescence in the proper light. Green feathers were present in the crown, but they were not conspicuous. No white was seen in the rusty-red, unforked tail. This bird was not particularly shy, readily allowing an approach to within 30 feet. No closer approach was attempted.

The Rufous had a deliberate, "bumblebee" flight characterized by arcing turns rather than the rapid, darting flight of the Ruby-throateds, which at first did not seem to know what to make of the newcomer. Eventually several Ruby-throateds showed aggressive behavior by making flight passes at the Rufous.

The male Rufous Hummingbird was present throughout the remainder of the afternoon and appeared at the same feeder on the morning of 3 September. During this time a number of color photographs were obtained, and the bird was studied by Wayne Irvin, Ricky Davis, and Harry E. LeGrand Jr. The call of the Rufous Hummingbird, a buzzing *bee* or *bzee* note, was heard on several occasions. The bird disappeared about 0945 on 3 September and was not seen subsequently.

This is the third reported occurrence of a *Selasphorus* hummingbird for North Carolina, but the first for an adult male. Because of the difficulty of separating female and immature Rufous from the Allen's Hummingbird in the same plumages, the previous two records could only be considered as "probably Rufous," based mainly on the much greater likelihood of *Selasphorus* hummingbirds in the East being Rufous rather than the Allen's.

The first state record involved a bird at Raleigh from 2 to 5 November 1976 (Hader and Howard, Chat 41:70-71); the second was of two birds near Hayesville from 17 October to 11 December 1981 (see LeGrand, Chat 49:71-72). Full descriptions of the Hayesville birds have not been published, but photographs have been deposited at the North Carolina State Museum of Natural Sciences. Haberyan has conclusively documented the occurrence of the adult male Rufous reported in this paper by donating color photographs to the State Museum.

First Nesting of Sooty Tern in South Carolina

PHIL WILKINSON

South Carolina Wildlife & Marine Resources Department
407 Meeting Street, Georgetown, S.C. 29440

On 10 June 1980, I found a pair of Sooty Terns (*Sterna fuscata*) nesting on Bird Key at the mouth of the Stono River in Charleston County, S.C. I was conducting the annual survey of shorebird and seabird colonies along the South Carolina coast when I found the nest. It contained one egg, which was colored white and was speckled with dark brownish spots and larger blotches. The nest was a shallow scrape in the sand, unlined, but with pieces of dried Saltmeadow Cordgrass (*Spartina patens*) pulled around the edge of the scrape. The egg was on bare sand. Next to the nest was a clump of *S. patens*, which partially drooped over the nest. The nest was situated behind the dunes on a relatively low, flat, sandy area that was elevated above all but storm tides. It was on the periphery of a Black Skimmer (*Rynchops niger*) and Gull-billed Tern (*Gelochelidon nilotica*) colony.

I returned to Bird Key on 26 June 1980. The nest was still attended, but the egg was unhatched. At that time pictures of the egg, nest, and adults were taken. These pictures are now at the Charleston Museum (ChM 1987.7.001-005).

I returned to the rookery again on 13 July 1980, at which time neither the egg nor a chick was found. However, there were thousands of chicks of other species present, and the one Sooty Tern chick could have easily been missed.

This is the first nesting record of the Sooty Tern for South Carolina. In 1978 a pair of Sooty Terns attempted to nest at Morgan Island in the estuary north of Cape Lookout, N.C. A nest with an egg was found there on 16 June 1978, beneath a clump of *S. patens* (Fussell et al., Amer. Birds 35:236, 1981).

Otherwise, the nearest nesting areas of the Sooty Tern are in Florida at Bush Key in the Dry Tortugas, and on the Chandeleur Islands in Louisiana (Clapp et al., Marine Birds of the Southeastern United States and Gulf of Mexico, Part III, 1983).

[EDITOR'S NOTE: Another Sooty Tern pair nested in the lower Cape Fear River, N.C., in 1982 (Shields and Parnell, Chat 48:73-74, 1984).—WP]

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1986 unless otherwise indicated)

COMMON LOON: Herb Hendrickson noted five on the late date of 15 May at Lake Townsend, near Greensboro, N.C.

WILSON'S STORM-PETREL: In mid-May, six were seen in Pamlico Sound just inside Ocracoke Inlet, N.C., by George Harris, who also noted two more at Silver Lake at Ocracoke. Rich Boyd saw another in Beaufort Inlet, N.C., on 12 May.

LEACH'S STORM-PETREL: Two were observed off Charleston, S.C., on 16 May by Dennis Forsythe.

WHITE-TAILED TROPICBIRD: By far the earliest record for North Carolina was an adult seen immediately after a storm on 19 April. Rich Boyd noted it in flight over Bear Island in Hammocks Beach State Park. He saw the long tail, plus "yellow bill, only a little black at the ends of the wings and black markings from mid-wing above (at the elbow) back to where the back of the wing joins the bird's body" [taken directly from Boyd's letter to the "Briefs" editor.—HEL].

AMERICAN WHITE PELICAN: Quite rare inland was one seen at Lake Marion, S.C., on 30 April and 14 May by Carroll Belser and Will Post. One again spent the entire winter on the Ashley River at Charleston (Steve Compton).

GREAT CORMORANT: A cormorant lingered at Huntington Beach State Park, S.C., to at least 26 April, when it was seen by Robin Carter and other participants on a Big Day count.

ANHINGA: Records to the north of the breeding range, all in North Carolina, were one at Lake Benson near Raleigh on 28 April (Robert Hader, Tom Howard); one at a pond in central Halifax County on 7 May (J.B. Elder, fide Frank Enders); two at Horton's Pond near Jordan Lake in eastern Chatham County on 10 May (Grant MacNichols); and a pair again seen near Weldon on 28 May (Randy Yelverton).

MAGNIFICENT FRIGATEBIRD: Two second-hand reports were received from the North Carolina coast. One was seen near Beaufort in May, according to John Fussell [observer not given—HEL], and Clarence and Ginny Diersing saw another on 31 May off of Hatteras (fide Bill Wagner).

AMERICAN BITTERN: One was rather rare in the mountains at Cashiers, N.C., where seen by Douglas McNair on 14 May.

GREAT EGRET: Douglas McNair noted a rare spring egret in the mountains at Cashiers, N.C., on 15 April. Perhaps the largest inland nesting colony in North Carolina is located on Conine Island near Williamston, where Merrill Lynch observed 200+ nests on 20 April, in addition to nesting Great Blue Herons.

SNOWY EGRET: Seldom seen far inland in spring, two each were noted at Fayetteville, N.C., on 15 April (Philip Crutchfield, Jim Sipiora) and at Thurlow's Lake near Vass, N.C., on 14 May (Jay Carter). One was also at Lake Townsend near Greensboro on 24 May (Herb Hendrickson).

YELLOW-CROWNED NIGHT-HERON: One was seen on 9 May at Greensboro by Herb Hendrickson, and also in the piedmont was a possible pair seen regularly and perhaps nesting this spring in Charlotte, N.C., by Nicholas Kenney.

TUNDRA SWAN: Tom Howard reported an immature that wintered (early December to at least 28 March) on a farm pond east of Durham, N.C.

GREEN-WINGED (EURASIAN) TEAL: The first report of this subspecies in the Carolinas in several years involved single males seen in Dare County, N.C., by Ricky Davis and Harry LeGrand—on 1 March at Pea Island and on 2 March near the Cape Hatteras lighthouse.

NORTHERN SHOVELER: An excellent mountain total of 15 was observed by Douglas McNair at Cashiers Pond in Cashiers, N.C., on 15 April.

EURASIAN WIGEON: Jim Parnell and Sam Cooper noted a male from 4 to 8 March at Davis, Carteret County, N.C.

GREATER SCAUP: A very late record was a female seen at rest and in flight at Cashiers, N.C., on 14 May (Douglas McNair).

LESSER SCAUP: A male, possibly injured, was seen by Herb Hendrickson at Lake Jeanette near Greensboro from 4 May to 4 June.

WHITE-WINGED SCOTER: Surprisingly rare in Pamlico Sound, N.C., one was seen at Swanquarter on 9 March by John Fussell. Another was somewhat late at Folly Beach, S.C., on 27 April (Dana Beach).

RED-BREASTED MERGANSER: Frank Enders saw a female in central Halifax County, N.C., on the rather late date of 14 May.

BLACK VULTURE: Scarce in the northern mountains was one in extreme northeastern Ashe County, N.C., on 18 May (Harry LeGrand, Ricky Davis).

MISSISSIPPI KITE: A pair nested high over the deck of a house in Sumter, S.C., adjacent to a swamp (fide Evelyn Dabbs), a first breeding record for that city.

GOLDEN EAGLE: Douglas McNair observed an immature at the Brevard Fish Hatchery in Transylvania County, N.C., on 28 March.

MERLIN: Rare in the mountains was one seen on 16 April near Fairview, N.C., by Ruth Young. Merlins in the piedmont were at Clemson, S.C., on 7 April (Charlie Wooten) and at Falls Lake, N.C., on 23 April (Ricky Davis).

BLACK RAIL: Sam Cooper heard as many as six birds calling at dawn in May at the Pine Island Audubon Sanctuary on Currituck Banks, N.C.

PURPLE GALLINULE: A vagrant was found alive on the side of a road in western Forsyth County, N.C., on 29 May by Lynn Shaffner and Ramona Snively.

LIMPKIN: Seldom seen in the Carolinas was one observed by Bob Tucker on 4 March at Savannah National Wildlife Refuge, S.C.

BLACK-BELLIED PLOVER: An excellent spring count inland was 10 at Fayetteville, with some in breeding plumage (Philip Crutchfield). Also inland in North Carolina were one at Jordan Lake on 10 May (Grant MacNichols et al.), three there on 24 May (Ross Jervis), and one near Vass on 4 May (Tom Howard).

LESSER GOLDEN-PLOVER: Spring records, all from South Carolina, were singles along the North Santee River on 22 March and at Folly Beach on 28 March (Perry Nugent party), at Clemson from 5 to 12 April (Charlie Wooten), and near Pendleton on 15 April (Steve Wagner); two were near Townville on 30 March (Wooten, Sidney Gauthreaux).

BLACK-NECKED STILT: Robin Carter noted one at Bear Island Wildlife Management Area in Colleton County, S.C., on 18 May. [Carter reported a number of notable birds from this site, calling it "a fantastic area of freshwater marsh and mud flats." This wildlife area has apparently been overlooked by birders.—HEL]

LESSER YELLOWLEGS: Notable counts for the mountains were 15 Lessers, along with seven Greater Yellowlegs, seen by Douglas McNair at Cashiers, N.C., on 15 April.

LONG-BILLED CURLEW: One seen by Greg Massey near Fort Fisher, N.C., on 22 March was very likely the same bird found there in January by other birders.

RED KNOT: An excellent count for North Carolina was 1200 birds seen by Philip Crutchfield and others at Sunset Beach on 12 April.

WHITE-RUMPED SANDPIPER: A notable inland total of 12 birds was seen on 25 May at Lake Hartwell, S.C., by Charlie Wooten. Three were also noted at Jordan Lake, N.C., on 19 May by Ricky Davis.

PECTORAL SANDPIPER: Several weeks late was one on 19 May near Pendleton, S.C. (Charlie Wooten).

PURPLE SANDPIPER: A late individual was seen by Rich Boyd on 12 May at Fort Macon State Park, N.C.

STILT SANDPIPER: The only inland report for the spring was of one on 4 May at Winston-Salem, N.C., as noted by Jim and Pat Culbertson.

RUFF: Sam Cooper observed a female at a small pond at Cape Hatteras point, N.C., on 4 May.

LONG-BILLED DOWITCHER: At a spoil pond on Eagle Island near Wilmington, N.C., four were seen and heard on 31 March (Greg Massey); at least one remained until 16 April (Kitty Kosh). John Fussell had an excellent spring count of 125 at Bodie Island, N.C., on 11 March.

PHALAROPE (sp.?): A phalarope was seen swimming and feeding on the water at Jordan Lake, N.C., on 4 June by Kathy Kuyper. [The bird was most likely a Red-necked, based on timing of migration and likelihood to occur inland, but the details did not rule out Red Phalarope.—HEL]

RED PHALAROPE: A good count of 700+ was reported by Dennis Forsythe off Charleston, S.C., on 16 March.

LONG-TAILED JAEGER: Always notable, two were seen from shore at Cape Lookout, N.C., on 25 May by Skip Prange.

LAUGHING GULL: Barbara Roth noted two birds on 17 May at Jordan Lake, N.C.

COMMON BLACK-HEADED GULL: An immature was observed by Ricky Davis and Harry LeGrand on 2 March at the tidal pond at Cape Hatteras point, N.C.

ICELAND GULL: One of the few reports for the last two winters was a first-winter bird at Beaufort, N.C., on 14 March (John Fussell).

LESSER BLACK-BACKED GULL: Though this species is no longer a great rarity along the North Carolina coast, records are still noteworthy. Sightings in that state were three at Cape Hatteras point on 9 March (Sam Cooper, Jim Parnell), one at Atlantic Beach on 16 March (John Fussell), one at Carolina Beach on 22 March (David Wright), and two at a landfill near Newport on 22 March (Fussell).

FORSTER'S TERN: Herb Hendrickson saw three at Lake Brandt near Greensboro, N.C., on 3 May.

CASPIAN TERN: Surprisingly just the second record for Forsyth County, N.C., was two at Salem Lake on 26 April (Hop Hopkins, Bert Hollifield, and others).

COMMON TERN: The only inland report for the spring was one noted by Herb Hendrickson on 24 April near Greensboro, N.C.

SOOTY TERN: One was seen in April and early May on a dredge island in the lower Cape Fear River, N.C., by Bill Brokaw, Jim Parnell, and others; however, no evidence of nesting was seen. Two Sooties were observed off Charleston, S.C., on 2 May by Dennis Forsythe.

THICK-BILLED MURRE: Several were seen in the surf at Wrightsville Beach, N.C., by David Wright on the late date of 22 March.

WHITE-WINGED DOVE: Pete Laurie saw one in flight at Fort Johnson near Charleston, S.C., on 12 May. The large white patches on the upper surface of the wings were noted.

COMMON GROUND-DOVE: Unusually far inland was one seen on 6 February at Silver Bluff Sanctuary, S.C., not far from Augusta, Ga. (Dan Connelly). Gail Whitehurst reported that a man in Topsail Beach, N.C., saw "lots" of this species at his feeder during the winter and she observed three at that site in June. [This species has declined along the coast of the Carolinas in the past 5 years.—HEL]

BLACK-BILLED CUCKOO: The only spring reports, all during the first half of May, came from Fairview (Jerry Young) and Brevard (Robin Carter et al.) in North Carolina and York (Bill Hilton Jr.) in South Carolina.

YELLOW-BELLIED SAPSUCKER: One was seen drumming on territory on 18 May at Trout Lake near Blowing Rock, N.C. (Ricky Davis, Harry LeGrand, Ken Knapp). Davis and LeGrand heard one calling at the same site on 19 May 1985, also apparently on territory and perhaps the same bird.

OLIVE-SIDED FLYCATCHER: Tom Howard saw one near Long Branch Creek in north-central Ashe County, N.C., on 10 May. Extremely rare near the coast in spring was one noted singing

- on 30 May by Sam Cooper in Nags Head Woods, N.C.
- WILLOW FLYCATCHER:** Sam Cooper saw singing migrants at the Pine Island Audubon Sanctuary on Currituck Banks, N.C., on 26 May, 29 May (three birds), and on 8 June. The species is seldom noted in spring in the coastal plain, much less along the coast.
- GRAY KINGBIRD:** Nearly annual in recent years along the North Carolina coast, one visitor was seen on 19 May by John Fussell at the Coast Guard Station on Pea Island.
- TREE SWALLOW:** Early for a very high elevation were two noted by Rick Knight at Carvers Gap on Roan Mountain, N.C., on 16 March.
- FISH CROW:** Several spent the winter near Rock Hill, S.C., as noted by Bill Hilton Jr.
- RED-BREASTED NUTHATCH:** Charlie Wooten saw two on 26 May at the Walhalla Fish Hatchery in northern Oconee County, S.C. One bird was inspecting a cavity. This is indirect evidence of a nesting attempt; the species has never been found breeding in that state.
- HOUSE WREN:** Two pairs, presumably on territory, were seen along Millis Road in Croatan National Forest, west of Newport, N.C., on 12 May by Rich Boyd. The species has previously been reported from this general area in June, and thus nesting is probably occurring.
- SEDGE WREN:** A good inland count, presumably of migrants, was three singing in a marsh in eastern Richland County, S.C., on 22 and 24 April (Robin Carter).
- SOLITARY VIREO:** Harry LeGrand noted four birds singing at Umstead State Park, Wake County, N.C., on 15 March. These birds might have been overwintering individuals rather than early-arriving breeders.
- WARBLING VIREO:** The species was again noted at Camp Rockmont near Swannanoa, N.C., as Ron Warner saw one on 14 May. This is the southernmost site where this vireo apparently nests in that state.
- GOLDEN-WINGED WARBLER:** Very rare near the coast in spring was one, a male, 27 April by Greg Massey near the Brunswick River in Brunswick County, N.C.
- BREWSTER'S WARBLER:** One individual of this hybrid was seen in western Forsyth County, N.C., on 1 May by Pat Culbertson.
- LAWRENCE'S WARBLER:** Rare and early was a male of this hybrid seen by Pat Brokaw at Long Beach, N.C., on 17 April.
- NASHVILLE WARBLER:** Always of interest in spring was one singing at Crowders Mountain State Park, N.C., on 2 May (Paul Hart).
- YELLOW-RUMPED (AUDUBON'S) WARBLER:** Kitty Kosh noted a male in partial breeding plumage at Wilmington on 11 April. Among the marks she observed were "yellow throat above black breast; more black on head than other Yellow-rumps in flock; bright yellow rump."
- BLACKBURNIAN WARBLER:** Individuals seen by Mike Cooper on 13 May at Hilton Head Island, S.C., and by Sam Cooper on 29 May at the Pine Island Audubon Sanctuary on Currituck Banks, N.C., were very rare for the coast in spring.
- BAY-BREASTED WARBLER:** Sam Cooper noted a rare spring migrant on the coast at Nags Head, N.C., on 14 May.
- NORTHERN WATERTHRUSH:** A singing migrant was late on 28 May at Cashiers, N.C., as reported by Douglas McNair.
- CONNECTICUT WARBLER:** Paul Hart observed a singing male on 13 May at Crowders Mountain State Park, N.C.
- INDIGO BUNTING:** One was at Kitty Kosh's feeder in Wilmington, N.C., from 14 to 17 March, about a month before spring migrants begin to appear in the Carolinas.
- LARK SPARROW:** Often not reported as spring migrants in the Carolinas were three records for North Carolina: one near Raleigh on 26 April (George Hervey), one in Craven County near Harlowe on 8 May (Janet Lembke), and one at Cedar Island on 15 May (John Fussell).
- LINCOLN'S SPARROW:** The only report for the spring season was one banded by Bill Hilton Jr. at York, S.C., on 12 April.

COMMON REDPOLL: Truly remarkable, and presumably the latest ever for the Carolinas, was one seen at a feeder in Long Beach, N.C., on 21 May by Chris Marsh.

BACKYARD BIRDING

(Continued from Page 36)

chances of getting a fish were, we saw him begin to dance around. He hopped a few inches from the sand, simultaneously raising his enormous wings and fanning the air with them. He created a considerable space with this activity and quickly grabbed a fish with his long beak. Moving slightly away from the crowd of gulls, he worked the sandy fish around in his bill, getting it into a head-first position, and proceeded to swallow the prize—in the same way all herons do with a live fish they have snatched from the water. This heron had been hanging around the pier for several days—a fact that had surprised us, as we usually see herons only in the marshes. Apparently this bird preferred a relatively easy hand-out to his normal fishing patterns.

A New Kind of Watering Hole

Near the Topsail fishing pier is a motel. It has a boardwalk leading down to the beach. At the point where the boardwalk meets the stairs leading to the motel, there is an outside shower for the use of guests wishing to rinse off salt and sand. The shower leaks a little when turned off. We noted a number of times that a small flock of Boat-tailed Grackles had discovered that by perching on top of the shower-head and leaning downward, they could get drinks of water. Only one bird could drink at a time, and there was always a queue of grackles awaiting a turn whenever “people traffic” was light.

We were reminded of a similar way that we saw many species of birds getting water from a leaking faucet some years ago. We were camping in a Ponderosa Pine forest in central Oregon. There was a large water-storage tank, and a steady drip came from the faucet. Just at dusk, we noted Purple and Cassin's Finches and a Mountain Bluebird, among others, drinking here. In habitats where water is scarce, birds discover any and all sources of fresh water, whether they be natural or placed by the hand of man. We are all familiar with our backyard birds' dependence on a birdbath or two. While we probably do not think much about it, we humans have made our impact (in a good sort of way) on the environment by making it possible for birds to find water. Offering water, as well as food, gives us many more birds to watch and enjoy. It often permits us to see birds we might otherwise miss.



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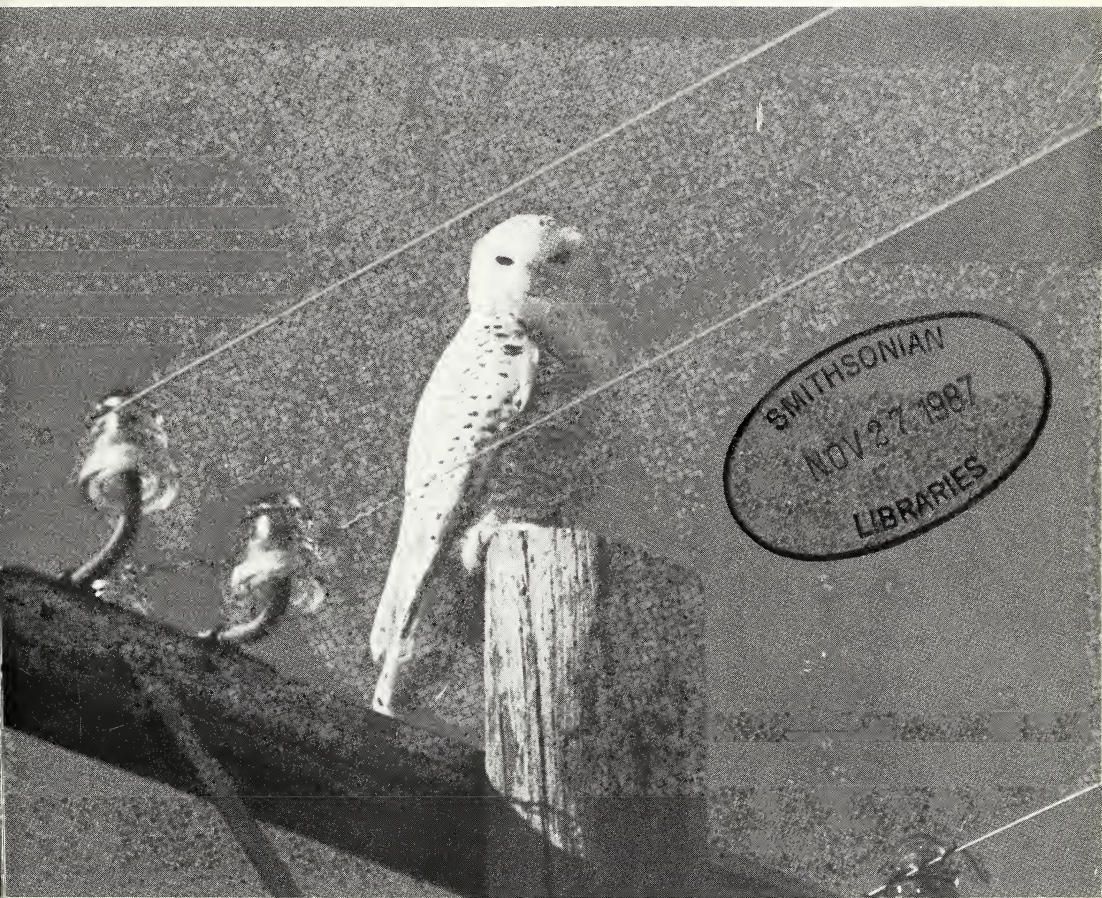
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Editor	Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes	E. Wayne Irvin, North Carolina Editor
	William Post, South Carolina Editor
Briefs for the Files	Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable	Louis C. Fink, 100 Clyde Morris Blvd., No. 155 Ormond Beach, Fla. 32074
Backyard Birding	Gail T. Whitehurst, 52 Lakeshore Drive, Asheville, N.C. 28801
Bird Count Editor	John O. Fussell III, P.O. Box 520, Morehead City, N.C. 28557
Art and Photography	John Henry Dick and Jack Dermid
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OUR COVER—See page 72 for details about the Snowy Owl photographed near Columbia, S.C., by Jimmy Wood.

Notes on the Breeding of Northern Finches in North Carolina

MICHAEL H. TOVE, *Editor*

The following four field notes and one letter constitute a minisymposium on the topic "Northern Finches Breed in Western North Carolina." Specifically, they deal with Pine Siskins (*Carduelis pinus*) and Red Crossbills (*Loxia curvirostra*). Both species have long been recognized as occurring in summer and probably breeding in North Carolina (Brewster 1886, Cairns 1889, Simpson and Simpson 1983, Potter et al. 1980). Haggerty's (1982) discovery of nesting Red Crossbills constituted the first documented evidence of breeding for that species in the state. Apart from that record, no other direct evidence has come to light prior to the present publication.

Because of the irruptive nature of populations of both species in their northern ranges, caution must be exercised when drawing conclusions about their reproductive status in North Carolina. Moreover, I feel compelled to admonish that no amount of circumstantial evidence of breeding will replace the direct observation of an active nest with eggs or young, or the observation of parents feeding fledglings incapable of sustained flight. This is particularly true for the Pine Siskin, which attains reproductive condition prior to reaching the breeding grounds (Yunick 1981). In spite of these precautions, carefully assessed indirect evidence can provide valuable insights in the absence of better data.

In the interest of simplicity, I have elected to combine all the literature citations into a single section that follows the last contribution.

*North Carolina State Museum of Natural Sciences, P.O. Box 27647,
Raleigh, N.C. 27611*

Possible Effects of Artificial Feeding on Nest-site Selection by Pine Siskins

BILL SIEBENHELLER and NORMA SIEBENHELLER

Efforts to confirm breeding of the Pine Siskin (*Carduelis pinus*) in North Carolina have historically been concentrated in the high elevations where preferred spruce-fir forest habitats predominate. In this paper, we report evidence that nesting may occur in the lower elevations, particularly in proximity to artificial feeding stations.

During the spring and summer of 1986, we observed behaviors of siskins at our feeder that suggest local breeding. In April and May, several pairs of birds were observed chasing each other as if engaged in courtship. About one month later, adults were twice seen gleaning small insects from the undersides of oak leaves. Palmer (1968) reported that insectivory by siskins occurred when nestlings were being fed. Beginning 6 June, our observations of birds at feeders included immatures. These individuals appeared ignorant of how to open the sunflower

seeds and were not observed feeding. While it is tempting to assume they were recently fledged, the lack of begging behavior and free-flying capabilities warrant caution. When the birds departed the area, they did so rather abruptly. Although Palmer indicated that this behavior is consistent with breeding populations, to draw conclusions from the observation is risky.

In addition to these observations, we have records of extralimital breeding by Pine Siskins near feeders at our home on Staten Island, New York (Siebenheller and Siebenheller 1976). In 1976, 1978, and 1982 we observed young birds begging food from adults while visiting our feeder. In 1982, we located an active nest about ¼ mile from our home. We believe that the birds we observed relied heavily on the "endless" supply of food at our feeder, which may have provided impetus for them to remain to breed.

In conclusion, we feel that the presence of well-maintained feeding stations into summer may encourage Pine Siskins to breed nearby. As Messineo (1985) has indicated, siskins are early breeders (there are March egg dates from New York). Thus, Pine Siskins that remain at a feeder well into spring constitute potential breeders. For this reason, we urge observers to monitor late birds for signs of nesting and hope that this will lead to the discovery of an active nest.

19 Grouse Lane, Brevard, N.C. 28712

Preflight Pine Siskin at Asheville, N.C.

NORMA K. WILLIAMS

The following two paragraphs, taken from a letter to Eloise F. Potter dated 7 June 1982, support the Siebenhellers' evidence of Pine Siskins' breeding near artificial feeding stations at relatively low elevations in the North Carolina mountains. The original letter is on file at the North Carolina State Museum of Natural Sciences.

"I have many bird feeders around [my house in Asheville, Buncombe County, N.C.], and this winter we were inundated by a large flock of Pine Siskins. Since they were so ill-mannered around the feeders, I looked forward to their return north, around early May. Many of them did leave, but quite a few are still here.

"Today while sitting on the front porch, I saw a baby Pine Siskin under the shrubbery. It cannot yet fly, but it is undoubtedly a Pine Siskin. . . . I held this bird in my hand long enough to identify it."

The elevation of Asheville is about 680 m (2220 feet).

34 Stockwood Lane, Asheville, N.C. 28803

Possible Nesting of Pine Siskins at Southern Pines, N.C., in 1982

LIBBA WATSON and JOHN WATSON

During the winter of 1981-1982, a number of Pine Siskins visited our sunflower-seed feeder throughout the season. After the majority left in the spring, we continued to see one bird at a time taking sunflower seeds in May and on into

June. Our identification of the species was confirmed by Jay Carter, who saw one Pine Siskin at our feeder in June 1982.

At 0700 on the morning of 18 June, three siskins were seen together. One was at the feeder, and the other two were on two air-conditioning units about 15 feet from the feeder, one bird on each unit. This was unusual behavior, as we had never seen a siskin on the air-conditioning units before. We concluded that they must be immatures, although we saw no other behavior to suggest this idea. On the 19th and 20th, one siskin was noticed at the feeder each day. At 1645 on the 21st, there were two siskins at the feeder. That was the last time they were seen.

Evidence of possible nesting by Pine Siskins in the North Carolina Sandhills supports the statements of the Siebenhellers regarding the effect of feeding stations on extralimital breeding activity.

208 Rob Roy Road, Southern Pines, N.C. 28387

The Red Crossbill in Western North Carolina: A Review of Records Indicating Breeding

DAN K. ROSENBERG

The nomadic nature and erratic breeding of the Red Crossbill (*Loxia curvirostra*) make it a difficult species to study. Although the literature contains numerous reports of breeding-season observations from North Carolina, there are only two confirmed breeding records (Haggerty 1982; Simpson, see below). This paper is designed to present a review of reports in which breeding was suspected. My objective is to demonstrate that in spite of minimal direct evidence, there is every reason to suspect breeding from a wide geographic range in the mountains.

Curtis's 1854 observation of the Red Crossbill appears to be the first record from western North Carolina. In September 1854, he found the Red Crossbill to be fairly common in the spruce forests of the Black Mountains (Simpson and Simpson 1983).

Brewster (1886), Sennet (1887), and Cairns (1889) reported the species from the mountains of North Carolina in summer. Examination of the literature reveals subsequent breeding-season reports from at least eight counties in western North Carolina (Table 1). In addition to these data, I have personal observations from field trips made during June and September 1984.

On 20 and 21 June 1984, Jeff Groth and I collected seven Red Crossbills near the summit of Roan Mountain. The first day produced four birds (3 females, 1 male), all of which were juveniles approximately 10 weeks old. The next day a subadult female was taken alone, and later an adult male and a subadult female were taken together. One juvenile female was distinctive in being larger and larger-billed than the other six birds. The seven specimens were deposited in the Museum of Vertebrate Zoology, University of California, Berkeley.

During an excursion to the Linville Gorge Wilderness Area, Avery County, N.C., from 4 to 8 September 1984, I observed several flocks of Red Crossbills. A flock of four birds, including at least two juveniles, was seen at the Babal Towers section. A flock of three birds was seen in the same area shortly thereafter. A flock

of five birds was in a clearcut with several mature White Pines (*Pinus strobus*) that had a large cone crop. Although each flock of Red Crossbills was seen independently, the numerous vocalizations heard throughout the trip indicated a fairly large population.

The large numbers of birds reported, their widespread distribution during summer, and the presence of juveniles in late summer strongly suggest that, in spite of the paucity of direct evidence, the Red Crossbill is a breeding species in suitable habitat throughout the mountains of western North Carolina.

Acknowledgments. My interest in this species was sparked by Jeff Groth, and I am grateful for his guidance. Many thanks also to C.S. Adkisson, L.A. Everton, and D.M. Porter for helpful comments on earlier drafts of this manuscript, and to J. Hinshaw, R. Rosenberg, and the Van Tyne Memorial Library for library assistance.

Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24060 (Present address: Department of Fisheries and Wildlife, Oregon State University, Corvallis, Oregon 97331-3803)

Red Crossbills Nesting at Linville Gorge, Burke County, N.C.

MARCUS B. SIMPSON JR.

The Red Crossbill (*Loxia curvirostra*) is an erratic resident of North Carolina. Although there are numerous summer records of the species, there is but a single documented nesting record for the state (Haggerty 1982). The present report describes what appears to be the second confirmed nesting by the species in North Carolina.

On 21 June 1986 I noted several pairs of Red Crossbills in mixed deciduous-coniferous woodlands around Wiseman's View, at elevations of 1030 to 1060 m (3400-3500 feet), along the western ridge of Linville Gorge, Burke County, N.C. Returning to the area on 12 July, I discovered an adult male and female carrying nesting material to a partially completed nest situated on the limb of a Table Mountain Pine (*Pinus pungens*) 3 m from the trunk and 6 m above the ground. The site was about 1 km SW of Wiseman's View at an elevation of 1006 m (3320 feet) on the south slope of Green Mountain along the main western ridge of Linville Gorge at the boundary between Burke and McDowell Counties. I observed the birds for several hours on 12 and 13 July. Both sexes carried pine needles and small twigs to the structure at intervals of 2 to 10 minutes. The female frequently positioned herself in the nest, apparently sizing the structure.

I again visited the site at 1100 on 3 August and watched the female occupying the nest without interruption for a period of about 1 hour. The lengthy period spent on the nest strongly suggested that she was incubating. The male was heard singing occasionally, but was not seen.

My final visit to the nest was at 1700 on the afternoon of 17 August. Both adults repeatedly carried food to a single nestling, whose head was clearly visible above the rim of the nest whenever the adults approached.

TABLE 1. A summary of observations of Red Crossbills from western North Carolina in which breeding was suspected or documented.

Location	No. Birds	Elevation	Dates	Source
Highlands, Macon Co.	pair, female gathering twigs	1160 m (3800 ft)	July-Aug. 1963	Johnston (1963)
Great Smoky Mountains, Swain Co.	"fairly common"	above 1525 m (5000 ft)	Summer	Stupka (1963)
	1 pair with 3 juveniles	1540 m (5050 ft)	14 June 1965	Swindell (1974)
Shining Rock, Haywood Co.	1 pair nest building	1750 m (5740 ft)	13 June 1970	Simpson (1974)
Black Mountains, Buncombe Co.	"numerous"	above 1675 m (5500 ft)	permanent residents 1883-1889	Cairns (1889)
Mt. Mitchell, Yancey Co.	30 birds incl. juveniles	1585 m (5200 ft)	6 June 1930	Burleigh (1941)
Roan Mtn., Mitchell Co.	"adults carrying food"	?	July 1974	Eller (1975)
	7 birds incl. 4 juveniles	1890 m. (6200 ft)	20-21 June 1984	Rosenberg (pers. obs.)
Linville Gorge Wilderness Area, Avery Co.	several flocks incl. 2+ juveniles	?	4-8 Sept. 1984	Rosenberg pers. obs.
Linville Gorge, Burke Co.	1 pair with 1 nestling	1006 m (3320 ft)	12 July- 17 Aug. 1986	Simpson (see below)
Boone, Watauga Co.	active nest	?	5 Sept.-13 Oct. 1981	Haggerty (1982)

Although successful nesting by Red Crossbills has now been confirmed at two localities and indirect evidence of breeding in North Carolina is fairly abundant, observers should continue to document the breeding of this species in the Carolinas.

11905 Yellow Rush Pass, Columbia, Maryland 21044

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CBC Rare Bird Alert Phone Number
704/875-2525



Roundtable

... with Louis C. Fink

How to Keep Bees and Wasps Away from Hummingbird Feeders

According to an anonymous caller on a radio talk show, inserting short lengths of a plastic drinking straw in the openings of a hummingbird feeder will discourage bees and wasps. The sections of the straw should be long enough to make it impossible for these insects to drink the syrup, but short enough so hummingbirds will still be able to reach it.

Migration Study Published

Autumn Land-bird Migration on the Barrier Islands of Northeastern North Carolina, by Paul W. Sykes Jr., was published by the North Carolina Biological Survey and the North Carolina State Museum of Natural Sciences in December 1986. The book was adapted from a thesis Sykes submitted as a requirement for receiving his M.S. degree from North Carolina State University. Although most of the field work was done in 1965, the discussion includes additional land-bird migrants found in the region by Sykes and others since that date. The study provides documentation for the first state records for three species: Swainson's Hawk, Sage Thrasher, and Western Meadowlark.

Land birds begin migrating southward along the North Carolina coast in mid-July, and the movement continues into mid-December. The major portion of the migration comes between the middle of August and the end of November. The biggest flights occur in the 1 to 2 days following passage of a cold front.

Sidney A. Gauthreaux Jr. and Harry E. LeGrand Jr. reviewed the manuscript and offered suggestions for improving the text. The heart of the 54-page book, however, is Table 3, which lists the dates of occurrence for 145 species on the basis of 109,192 individuals Sykes saw or heard from August through November 1965. Nomenclature and species order conform with the 1983 AOU *Check-list*.

"When I helped Paul with his bird-banding operation, I never dreamed I would—20 years later—edit his manuscript," said Eloise Potter, editor for the Occasional Papers of the N.C. Biological Survey. "Although many excellent migration studies have been published since 1966, Paul's work does not suffer in comparison. Anyone who enjoys looking for rare land birds along the coast will

want to own his book." Copies are available from the N.C. State Museum of Natural Sciences, P.O. Box 27647, Raleigh, N.C. 27611. The price is \$5, postpaid; make checks payable to the NCDA Museum Extension Fund.

Question Box

How much do little hummingbirds weigh and how long do they live?

They usually live 4 or 5 years, but "X-18025" is a Broad-tailed Hummingbird (*Selasphorus platycercus*) that weighs one-seventh of an ounce and is 11 years old. It showed up in Gothic, Colorado. X-18025 has made ten migrations to Mexico. A female, she may be a great-great-great-great-great-great-great-great grandmother. Large birds usually live longer than small birds. The oldest known Canada Goose lived only 24 years.

BOOK REVIEWS

BIRD-BANDING: EXPERIENCING THE SCIENTIFIC METHOD

Bill Hilton Jr. 1987. Northwestern High School, Route 11, Box 3, Rock Hill, S.C. 29730. 24 p. Softcover, \$5.

This how-to manual was written for high-school biology teachers by a teacher who practices what he preaches. Working with students at Northwestern High School in Rock Hill, S.C., Bill Hilton Jr. uses ornithology to teach cognitive thinking skills and the basic principles of scientific research. Although the manual stresses the use of bird banding, Hilton provides practical guidelines for studies that employ other methods. The last page in the book is an evaluation sheet that Hilton uses to grade the research projects of his Biology One students at the end of the first semester. He looks at writing skills as well as the biological aspects of the project. Any student who passes Biology One at Northwestern should be able to prepare a manuscript acceptable to the editor of *The Chat*. Teachers who want to motivate their science students should read Hilton's book very carefully.—EFP

WOOD WARBLER'S WORLD

Hal H. Harrison. 1984. Simon and Schuster, New York. Illus. 336 p. Softcover, \$19.95.

A major airline once ran an advertisement featuring row upon row of the same airplane drawing, each labeled with a different city of destination. I cut out the ad and sent it to a friend with the comment, "So you thought warblers were confusing." I still find North American wood warblers confusing in appearance; but after reading Harrison's *Wood Warbler's World*, I find the 53 species seem more like individuals I would like to meet some day.

(Continued on Page 83)

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

Red-footed Booby Added to South Carolina State List

WILLIAM POST

The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

THOMAS A. MURPHY

South Carolina Wildlife and
Marine Resources Department
Poco Sabo Plantation
Green Pond, S.C.

A moribund Red-footed Booby (*Sula sula*) was picked up on 27 July 1986 on the beach at Edisto Island State Park, Charleston County, S.C. The bird was kept alive for 2 days, and was then brought to the Charleston Museum. The specimen (ChM 1987.3.011) is a male of the brown color phase. It weighed 516.8 g when received. The specimen was prepared as a standard study skin with detached, flattened wing, and is accompanied by color photographs of the soft parts. Identification was confirmed by comparison with the series of specimens in the U.S. National Museum.

On the Atlantic coast, the Red-footed Booby has been recorded only as far north as southern Florida (AOU Check-list, 1983). This individual was therefore far beyond its normal range. The nearest breeding colony is on Mona Island, west of Puerto Rico. During the period of its appearance, we know of no unusual weather conditions that would explain this accidental occurrence.

We thank David Stergus, who salvaged the bird; Diane Howell, who prepared the specimen; and Roxie C. Laybourne, who helped confirm the identification.

Anhinga, a Breeding Confirmation from Cumberland County, N.C.

PHILIP J. CRUTCHFIELD

901 Montclair Road
Fayetteville, N.C. 28304

MORRIS E. WHITFIELD

P.O. Box 53294
Fayetteville, N.C. 28305

Although the finding of Anhingas (*Anhinga anhinga*) in Cumberland County is noteworthy, such sightings are not unexpected as this area is situated well inside the reported range of the species in North Carolina (Potter et al. 1980). Although the Anhinga was listed in the county as hypothetical during the late 1950s (Hauser 1957), the first positive identifications were not made until the spring and summer



Fig. 1. The first Anhinga nest found at Jessup's Mill Pond, Cumberland County, N.C., on 21 July 1985, was about 12 feet above the water in a 25-foot Pond Cypress. The nest contained two young and provided the first proof of local breeding.

of 1980 (Chat 44:113, 45:19). From the spring of 1981 (Chat 45:104) through the summer of 1985, Anhingas have been observed regularly during the warm months of the year at Jessup's Mill Pond in the Beaver Dam Section of Cumberland County. This site is at the approximate latitude of the northernmost North Carolina breeding area at Lake Ellis (Potter et al. 1980). The possibility of breeding at Jessup's Mill Pond was noted as early as the summer of 1981 (Chat 46:21). However, nesting was not confirmed until the summer of 1985.

Jessup's Mill Pond, which is approximately 75 miles (118 km) from the Atlantic Ocean, is situated in an area known as White Pond Bay. It is a complex of 6 square miles containing streamheads, drainages and seepages, pocosins, and "Carolina bays." This pond is typical and representative of impoundments that drain the swamp-pocosin environments of the coastal plain of North Carolina. Cypress trees grow in the shallows of the darkly stained but clear water. Although the area generally given for this impoundment is 50 to 60 acres, this accounts only for the open water generally visible from the dam. Considerably more acreage in the swamp is inundated, to include some 200 to 300 acres.

A history of logging of this area commences with a general timber removal at a time just prior to the building of the first dam during the 1880s. The region was logged again during the 1940s (World War II). A selective cutting of trees in this area to include some of the swamp occurred during the early 1970s. A few trees were cored at this time from a grove of inaccessible large Swamp Gum (*Nyssa*



Fig. 2. A second Anhinga nest was found at Jessup's Mill Pond on 21 July 1985. This somewhat larger nest contained four young, two of which had flight feathers emerging from the down.

sylvatica var. *biflora*). These trees were estimated to be about 75 to 80 feet tall and had measured diameters of 10 to 12 inches (dbh). They were determined to be about 90 years old from ring counts.

There are three vegetative cover types recognized for the area of Jessup's Mill Pond and adjacent swamps: evergreen bay forest, pocosin, and swamp forest (Kologiski 1977). However, the area in which the Anhingas are nesting involves only the swamp forest.

Structurally, this stand shows a well-stocked and dense shrub zone of 4 to 6 feet in height. The young trees form a taller zone at 8 to 12 feet. The tallest cypress trees form, at 25 to 30 feet, a rather open overstory.

We arrived on the dam shortly after sun-up (0700) on 21 July 1985, and almost immediately saw a single male Anhinga fairly close by, drying its wings. A female was subsequently located at some distance, on the edge of the swamp. Sometime later, we found a second female in a cypress by a nest that housed two downy, snake-necked young. Later we discovered a second male Anhinga and a second nest.

The first nest (Fig. 1) was on a trunk-branch fork about 12 feet above the water in a Pond Cypress (*Taxodium ascendens*) with a diameter of 6 inches (dbh). The tree, about 25 feet tall, was on the edge of a small, open grove of cypress standing in water about 18 to 25 inches deep. The nest was constructed of coarse sticks forming a shallow basket approximately 20 inches in diameter and 8 to 9 inches deep. It was

lined with wilted green leaves. The young birds, with buffy-tan down, black beaks, and an eye-line, appeared about one-quarter to one-third grown. One was noticeably larger than the other.

The second nest (Fig. 2) was similarly positioned, but in a larger cypress. The nest appeared larger, and the leaf lining consisted of cypress leaves. There were four nestlings in this one. Two of the occupants were larger than their nestmates and were developing black primaries and stubby black tail feathers. The other two birds were of the size and level of development of the two birds in the first nest. Irregular egg-laying is suggested in Harrison (1975).

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Tricolored Herons and Snowy Egrets Breeding in the Interior of South Carolina

C.G. BELSER and W. POST
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

In South Carolina, Snowy Egrets (*Egretta thula*) and Tricolored Herons (*Hydranassa tricolor*) inhabit coastal areas and often wander into the interior after the breeding season. However, no confirmed nestings have been reported away from immediate coastal (tidewater) areas.

During the 1986 nesting season (March-July) we marked and monitored nests in the mixed-species heronry on Green ("Bird") Island on Lake Marion, near Eadytown, Berkeley County (33°26'N, 80°10'W). The colony site is 77 km from the Atlantic Ocean (Fig. 1). The most common species in the colony are Great Egrets (*Casmerodius albus*), Cattle Egrets (*Bubulcus ibis*), and White Ibis (*Eudocimus albus*). Other nesting species are Anhingas (*Anhinga anhinga*) and Little Blue Herons (*Florida caerulea*).

From 30 May 1986, about the time that small herons and White Ibis started nesting and Great Egrets had completed nesting, we usually saw five or more Tricolored Herons in the heronry. They frequented the central, low-shrub area of the island that was used most heavily by other nesting herons. The main tree in this section were Buttonbush (*Cephalanthus occidentalis*) and willow (*Salix* sp.). The White Ibis built nests in taller trees on the edge of the island. These were mainly Hackberry (*Celtis* sp.) and Bald Cypress (*Taxodium distichum*).

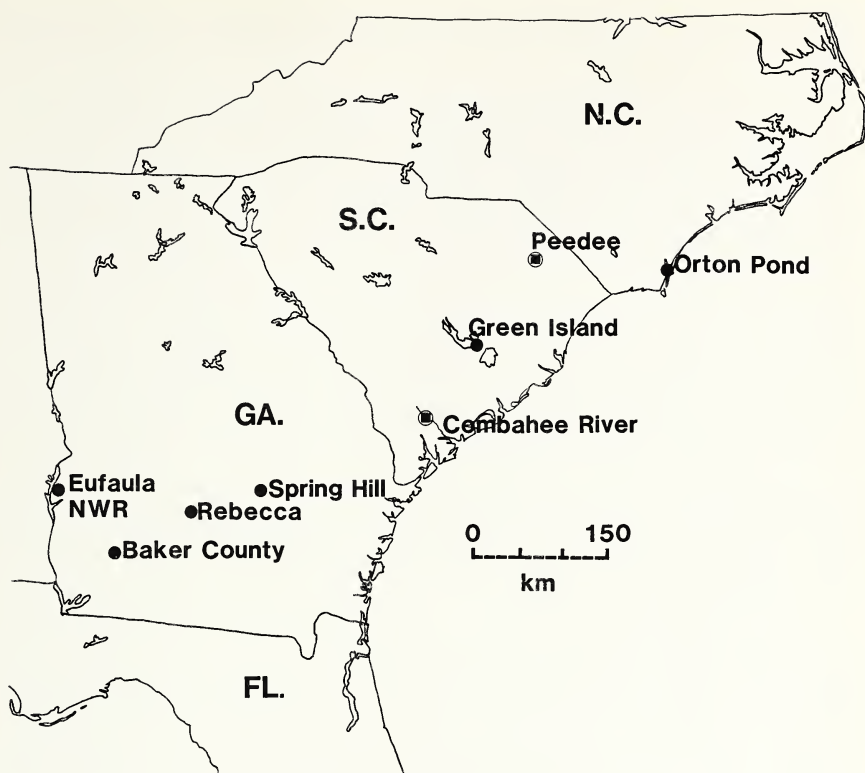


Fig. 1. Inland breeding localities of Snowy Egrets and Tricolored Herons in the Carolinas and Georgia. Solid circles = confirmed nesting sites; circled squares = reported, but not confirmed nesting sites.

On 11 July we found two nests containing young Tricolored Herons. In one nest, located in the top of a low Buttonbush, we found two young that were about 21 days old. In another nest, we found one young bird about 25 days old.

On 13 June we saw at least five Snowy Egrets in the central shrub zone. Nest 153 had initially been identified as a Cattle Egret's on 30 May, but on 27 June, we examined the three young in the nest closely and determined that they were Snowy Egrets.

These are the first confirmed nesting records for Snowy Egrets and Tricolored Herons in interior South Carolina. Based on aerial surveys, Osborn and Custer (1978:110) reported Snowy Egrets nesting in the Pee Dee Islands heronry at Marion, S.C., in 1975. This is 65 km from the coast (Fig. 1). These authors also mention fledged Snowy Egrets and Tricolored Herons at a heronry near the Combahee River, north of Yemassee (Fig. 1), in 1975. This site is about 30 km inland. However, no details of these records were published, and they were apparently never confirmed on the ground. The information was published without

further comment in inventory tables of all rookeries along the Atlantic coast (Osborn and Custer 1978).

In North Carolina, Pearson et al. (1942) and Soots and Parnell (1979) reported Snowy Egrets and Tricolored Herons nesting in the coastal plain at Orton Pond in Brunswick County. This area is 1 km from the Cape Fear River and 5 km from the ocean (Fig. 1). Lennon's Marsh near Lumberton in Robeson County (100 km inland) was the most diverse interior mixed-species heronry in North Carolina, but neither Snowy Egrets nor Tricolored Herons nested there (Soots and Parnell 1979).

Tricolored Herons and Snowy Egrets have nested in several interior colonies in Georgia. The first report of a Tricolored Heron nesting in the interior was in a heronry south of the Eufaula National Wildlife Refuge (LeGrand 1976), about 200 km from the Gulf of Mexico (Fig. 1). No details of this record were published. In 1979 two Tricolored Herons were fledged at Eufaula National Wildlife Refuge (B. Orteg in LeGrand 1979). Another interior colony, near Rebecca, Georgia (200 km from the Atlantic), had two Tricolored Heron nests in 1981 (Hopkins 1981).

The first Snowy Egrets nested in interior Georgia in 1970 at Spring Hill in Wheeler County, about 150 km inland from the Atlantic (Fig. 1) (Hopkins and Kilgo 1971). In 1986 three or more pairs of Snowy Egrets nested in Baker County, about 190 km from the Gulf of Mexico (M. Lynch and M. Hopkins *vide* H. LeGrand, pers. comm.)

In general, both species appear to nest in the interior more commonly in areas west of the Carolinas. For example, in addition to the Georgia records enumerated above, there are interior nesting records of Snowy Egrets for Mississippi (Werschkul 1977) and Missouri (Peterson 1965). The latter breeding site is about 725 km from the Gulf of Mexico. Still farther west, in Nevada, Snowy Egrets made up 12% of the nesting birds in a colony about 420 km from the Pacific coast (Giles and Marshall 1954).

As both species have repeatedly invaded the interior of Georgia and states farther west, it is surprising that there have been no verified nestings in the interior of South Carolina until this time. It is probable that the species have nested on the large interior lakes for some time, but have been overlooked. However, North Carolina, with better observer coverage than South Carolina, has not yet had any interior colonies with these species. Ornithologists in the interior of the Carolinas should be aware that these species may begin to move farther inland along the extensive network of hydroelectric lakes that have been created since World War II. Particularly appropriate colonization sites are colonies of Cattle Egrets.

Acknowledgements. For financial support we thank Santee-Cooper, The Thomas A. Yawkey Foundation, The South Carolina Wildlife and Marine Resources Department/Heritage Trust, and The Charleston Natural History Society. We also thank P.S. Coleman, D. Howell, and C. Seals for field assistance. Nancy Pringle typed several versions of this manuscript. Kathleen Post prepared Figure 1.

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First Documented Occurrence of the Ruff in South Carolina

MICHAEL F. COOPER

59 Florence Street

Central Islip, New York 11722

On 16 May 1986 at 1130, I photographed a Ruff (*Philomachus pugnax*) in Jasper County, S.C., about 14 km SSW of Hardeeville. The specific locality was a dredge-spoil site on the south side of US 17, just before it crosses the Savannah River.

The bird was in a small, shallow pool and was in a large mixed-species flock of shorebirds. The pond in which the Ruff was found is one of a group of temporary ponds associated with dredging operations of the U.S. Army Corps of Engineers. This particular pool was sandy, with no vegetation.

The Ruff was slightly larger than a nearby Lesser Yellowlegs (*Tringa flavipes*) and was easily identified by its "bottle shape": small head, small thin bill, and plump body. Its brown face, neck, and upper parts were also salient. The scapulars and tertials were large and floppy, and often were ruffled in the breeze.

When first seen, the Ruff was bathing in the middle of the pond. It then flew to the edge and began feeding actively. It walked about rapidly and pecked the surface constantly. Although it fed close to Lesser Yellowlegs, Stilt Sandpipers (*Calidris himantopus*), and White-rumped Sandpipers (*C. fuscicollis*), it did not interact with them. After about 20 minutes I left and telephoned Bob Tucker. We then returned to the spot and relocated the Ruff. We watched it for about an hour. Despite several searches over the next 2 days, the Ruff was not seen again. Most of the Lesser Yellowlegs were gone the next day.

This record is the first for South Carolina to be documented by a photograph or specimen. Seven color slides have been placed in the state collection (ChM 1986.46.1-1986.46.7).

I thank Pat Young of the U.S. Fish and Wildlife Service for arranging access to the spoil area.

Snowy Owl in Richland County, S.C.

LEX GLOVER
P.O. Box 117
Lugoff, S.C. 29078

JOHN EMMETT CELY
Nongame-Heritage Trust Section
South Carolina Wildlife and
Marine Resources Department
P.O. Box 167, Columbia, S.C. 29202

On 18 November 1986, at about 1600, we saw a Snowy Owl (*Nyctea scandiaca*) about 9 km N of Columbia on US 1. The owl was in the fields and orchards south of the Sandhills Research and Development Center. There was no mistaking the large white owl as it flew through the fields and perched in a small pine or on fence posts, utility poles, and billboards. It remained in the area for one week. While the owl was in the field, we checked it two or three times a day. We fed it mice. Our reason for the feedings was to maintain the owl's health, in case it was suffering from stress. We discontinued feeding when the owl attempted to catch prey on its own. The owl was fed three times during the week, with an average of three mice per feeding. It took only live food; once we dragged a dead rat across the ground, but to no avail. At one feeding, Glover accidentally dropped a mouse at his foot; as he bent down to pick it up, the owl left its perch to capture the mouse. Glover stood up and took a step back, while the owl picked the mouse up centimeters from his foot, brushing his leg with its wing.

On 26 November, a concerned individual caught the bird after it had moved to a busy intersection and had begun flying low over a four-lane highway. The bird was taken to Riverbanks Zoological Park. At the time of capture, the bird, which was an immature male, weighed 1.2 kg (Fig. 1). It was subsequently sent to the University of Minnesota Raptor Rehabilitation Center.

[EDITOR'S NOTE: This individual died in captivity in Minnesota. The whereabouts of the specimen is unknown. However, another specimen has been taken in South Carolina, and it is in the state collection.—WP]

Nest Destruction by the Eastern Wood-Pewee

PARIS R. TRAIL
Route 4, Box 268-A
Edenton, N.C. 27932

I have a home near Edenton, Chowan County, N.C., in the middle of a large acreage of mature deciduous trees. A number of species of woodland birds nest in the woods near the house. On 20 May 1986 I found a Ruby-throated Hummingbird (*Archilochus colubria*) nest by "bee-lining" the female as she left my hummingbird feeder. She was still in the process of lining her nest with willow cotton, so I put a Celestron telescope on it to observe her activities more closely. On 21 May, as I was watching through the telescope, a female Eastern Wood-Pewee (*Contopus virens*) entered the field of view, hovered beside the hummingbird nest, and quickly plucked out a beakfull of willow cotton and flew off. I subsequently discovered that she was



Fig. 1. Snowy Owl, photographed in captivity. (Photo by Chris Merck)

starting a nest on a dead limb of a Red Maple (*Acer rubra*) about 50 yards from the hummingbird nest. The pewee returned for more material and was buzzed and driven away, bill snapping, by the returning female Ruby-throated Hummingbird. The female pewee persisted, however, and during the day, while the female Hummingbird was absent, succeeded in totally destroying the nest. The Ruby-throated Hummingbird has abandoned that site and appears to be nesting in the woods on the other side of the house. I have not found the new nest.

On 23 May I saw the female Eastern Wood-Pewee hovering around the almost completed nest of a pair of Summer Tanagers (*Piranga rubra*). As I watched, she began to filch lining material from *this* nest. She made several trips to the Summer Tanager nest during the day, taking substantial amounts of lining material from it. In the face of this thievery, the Summer Tanagers may have abandoned this nest site, as I have not seen them around it for several days.

Both nests were very well concealed, and the Summer Tanagers' nest was about 100 yards from the pewee's nest. The pewee has completed her nest, so presumably her neighbors' nests are now safe. I had not previously observed this behavior in the Eastern Wood-Pewee and in my limited searches could find no references to it in the literature.

Massive Flight of Tree Swallows During Fall Migration on the South Carolina Coast

DOUGLAS B. McNAIR

Route 1, Box 324

Six Mile, S.C. 29682

Sally McNair and I saw a massive flight of migrating Tree Swallows (*Tachycineta bicolor*) on 14 October 1985 at Buck Hall Campground near Awendaw, Charleston County, S.C. The campground is situated directly on the Intracoastal Waterway and overlooks extensive saltwater marshes seaward for about 2 km. From 0715 to 0845 EST, we watched a continual stream of Tree Swallows migrating southwest along the coast, flying up to 30 m over the salt-marsh grasses. No swallows were seen migrating overland more than 30 m from the coast at the Intracoastal Waterway. My estimate of the number of Tree Swallows for this 1.5-hour period is at least 450,000 (5,000 birds per minute). The swallows called throughout their migratory flight, and we heard them in our tents at least 15 minutes before 0715. The massive flight ended abruptly at 0845.

At 0915, we watched migrating Tree Swallows from US 17 between the North and South Santee Rivers, north of Buck Hall Campground. Most of the swallows were seen at a great distance on the seaward side of the highway, migrating southwest along the coast. At least 5,000 swallows migrated inland and flew northwest up the Santee River marshes north of the highway until the swallows were lost from sight. This flight ended abruptly at 0920.

From 1030 to 1045, we watched 3,000 Tree Swallows (200 birds/min.) migrate southwest at the southern tip of Pawley's Island, about 45 km N of the Santee River marshes. No Tree Swallows were seen afterwards at nearby Huntington Beach State Park.

Thus, I estimate we saw at least 475,000 Tree Swallows migrating on or near the South Carolina coast in distinct movements from shortly after daybreak to 1045; most of these swallows were seen in one massive movement at Buck Hall Campground. Tree Swallow migration may be concentrated at this site because the salt marshes are relatively narrow here and they abut the Intracoastal Waterway, which does not have marshes on the landward side of it. Bulls Bay lies just beyond these narrow coastal marshes to the south where the bay forms a gentle ellipse on the landward side; seaward, 8 km of open water separates the southwest tip of Raccoon Key from Northeast Point of Bulls Island. I do not know whether Tree Swallows migrate over this open water or follow the salt marshes and adjacent coast. Many swallows feed on flying insects over the salt marshes while migrating, however, and this primarily diurnal migrant may need to forage extensively during migration.

We saw few Tree Swallows on 12 and 13 October at Huntington Beach State Park. One flock of about 3,500 stayed all day at the park on 12 October. Only about 400 Tree Swallows were seen to migrate south on 13 October. Thus, the massive flight of 14 October at Buck Hall Campground almost certainly originated from areas farther north. Flights of other insectivorous passerines, especially the parulids, were poor from 12 to 14 October. Both 12 and 13 October were overcast days with moderate temperatures (64-80 °F) and brisk northeast winds (10-15 knots), shifting

to the north during the early afternoon of the thirteenth. The sky was clear the morning of 14 October, with low winds (<5 knots) from the north-northwest and mild temperatures (64-86 °F). Thus, the weather that may have precipitated the massive Tree Swallow flight was a mild high-pressure frontal system that moved into coastal South Carolina from the afternoon of 13 October through the early morning of 14 October.

Heavy flights of Tree Swallows have been reported before from coastal South Carolina in early October, which is the peak of migration. Several individual flocks of 10,000+ have been seen, 24 km S of Georgetown and near Savannah in South Carolina (Chat 6:80, 24:29), but these counts pale in comparison to 100,000+ Tree Swallows P. Laurie and P. Nugent reported at Capers Island on 11 October 1975 (Amer. Birds 30:53), 250,000+ Tree Swallows P. Nugent and party reported at Huntington Beach State Park on 9 October 1983 (Chat 48:59), and the even more massive flight reported here.

Second Record of Say's Phoebe for North Carolina

HARRY E. LeGRAND JR.

331 Yadkin Drive
Raleigh, NC 27609

On Saturday, 7 December 1985, Clyde Adkins reported a Say's Phoebe (*Sayornis saya*) about 4 miles W of Lillington, Harnett County, N.C., at an abandoned quarry. He reported the sighting to Dick Brown at the Carolina Raptor Center, and Brown immediately placed the report on the CBC Rare Bird Alert. John Fussell notified me of this report and asked me to visit the site to see if the bird was still present.

I arrived at the quarry in midafternoon on 11 December. I spent an hour searching in vain for the phoebe to the south of the SR 1257-1258 intersection, where the bird had been seen on 7 December. I then walked northeast along a dirt road and railroad track for 1/2 mile to a cluster of abandoned buildings and old oil drums at another part of the quarry. A flock of Eastern Bluebirds (*Sialia sialis*) was present and perched on telephone wires around the buildings, and the Say's Phoebe was with this flock. I watched the phoebe for 15 to 20 minutes as it perched on wires, drums, and the buildings. I was able to approach within 100 feet of the bird to see the plain brown upperparts, head, and upper breast, the rusty lower breast and belly, and the rather large black tail. The bird wagged the tail frequently. Though there was no Eastern Phoebe (*Sayornis phoebe*) in the vicinity for comparison, the Say's seemed to be slightly larger than an Eastern Phoebe, with a definitely longer and wider tail.

At least six birders, including Fussell, saw the Say's Phoebe on 12 December in the vicinity of the abandoned buildings. Ricky Davis was able to compare the Say's with an Eastern Phoebe that was nearby, noticing the slightly larger size of the Say's. On that day the bird was more elusive than on the previous day, and David Wright was able to photograph the bird only at a rather far distance. The color prints were examined by the North Carolina Bird Records Committee in November 1986; however, the committee decided that the photos were not of sufficient clarity to

document the sighting. Nonetheless, the photos have been deposited at the North Carolina State Museum of Natural Sciences.

There are now two sight records of Say's Phoebe for North Carolina, but neither has been documented by a specimen or an identifiable photograph. The first record was noted by Lee Jones on 23 October 1965 near Raleigh (Chat 30:28-29). South Carolina has three known records, but there are no specimens or photos for those birds, either. Records for that state are for 19 January 1969 in Richland County (Chat 35:112), 30 September 1979 at Bulls Island (Chat 45:44-45), and 15 March 1986 along the Santee River (Amer. Birds 40:456-459). Full details of the last South Carolina record have yet to be published.

Yellow-bellied Flycatcher Added to South Carolina State List

W. POST and P.S. COLEMAN

The Charleston Museum

360 Meeting Street

Charleston, S.C. 29403

The Yellow-bellied Flycatcher (*Empidonax flaviventris*) is on the South Carolina hypothetical list (South Carolina Bird Life, 1970, p. 614), as no specimens have been taken in the state.

From 1984 through 1986, we collected four *Empidonax* that can be definitely assigned to *flaviventris*. All specimens were captured in mist nets placed in coastal scrub (*Myrica*, *Celtis*, *Baccharis*) at the edge of a salt marsh (Hog Island, Mount Pleasant) or next to dunes fronting Charleston Harbor (near Fort Moultrie, Sullivan's Island). We identified the birds by employing the key of Phillips et al. (Bird-Banding 37:153-171) and comparing them with other specimens of *Empidonax* (Table 1). All four were juveniles.

TABLE 1. Yellow-bellied Flycatchers collected in Charleston County, S.C., 1984-1986.

Charleston Museum No.	Sex	Date	Locality	Length (mm) of			Formula B ³	6th Primary cut out? ⁴
				Wing ¹	Bill ²	10th Primary vs. 5th		
1987.3.247	F	04 Sept. 1984	Mt. Pleasant	65.2	5.5	10>5	4.6	yes
1987.3.248	F	04 Sept. 1984	Sullivan's Is.	61.4	5.4	10<5	3.6	yes
1987.3.249	F	23 Sept. 1985	Mt. Pleasant	62.1	5.9	10>5	4.0	yes
1987.3.250	M	08 Sept. 1986	Sullivan's Is.	63.4	5.4	10>5	4.7	yes

¹Chord of wing

²From center of nares

³Distance between tip of sixth primary and the tip of the longest primary (see Phillips et al., op. cit.)

⁴See Phillips et al., op. cit.

These data indicate that the Yellow-bellied Flycatcher is a regular, though rare, early-fall migrant on the immediate coast. In the field, it is probably not possible to separate the species of *Empidonax* that regularly occur in South Carolina unless the subjects are singing, which they usually do only in the spring and summer.

Vermillion Flycatcher at Pea Island Refuge, N.C.

R.J. HADER

3313 Cheswick Drive

Raleigh, N.C. 27609

A male Vermillion Flycatcher (*Pyrocephalus rubinus*) was found at Pea Island Refuge on the North Carolina Outer Banks on 4 October 1986. It was seen initially around 1600 by R.J. Hader, who was birding alone. Subsequently it was seen by a number of others attending the Carolina Bird Club fall meeting. Photographs were taken by Ricky Davis and Chris Marsh. Copies have been submitted to the North Carolina Records Committee and the State Museum of Natural Sciences in Raleigh.

When first seen, the flycatcher was feeding from small shrubs along the edge of North Pond impoundment. Hader studied the bird for only a few minutes at close range (40 feet) to confirm the rather obvious field marks—small flycatcher, vermillion red underparts with crown, back, wings and tail all dark. Hader then left to post the sighting on the clipboard maintained for this purpose at Refuge Headquarters. Ricky Davis, Chris Marsh, Harry LeGrand, John Fussell, and several other CBC members found the bird about an hour later, and after more thorough study judged it to be a second-year male. The crown, though basically dark, had scattered red feathers. In addition there was faint dark streaking against the otherwise bright red breast and belly. These observers stayed with the bird until sunset. The following morning attempts to locate it were unsuccessful. It was speculated that the presence of several Merlins (*Falco columbarius*) in the immediate area may have been the reason for its disappearance.

There is one previous record of a Vermillion Flycatcher for North Carolina. An immature male was found 1 October 1972 at Nags Head by DuMont and Ake (Amer. Birds 27:43). It was later seen by Edmund LeGrand, Gard Otis, and Sebastian Patti. Details were not reported until 1981 (Chat 45:45). On the basis of this report, the Vermillion Flycatcher was accorded Provisional I status on the Checklist of North Carolina Birds (Chat 48:86).

Black-throated Gray Warbler at Wilmington, N.C.

KITTY KOSH

188 Lake Forest Parkway

Wilmington, N.C. 28401

On the morning of 5 January 1986, I observed a Black-throated Gray Warbler (*Dendroica nigrescens*) in my back yard at Wilmington, New Hanover County, N.C.

The bird was feeding in a Carolina Laurel Cherry (*Prunus caroliniana*), where it remained for about 20 minutes.

Field marks were noted as follows: top of head and back were gray; wings were gray with two white wingbars; gray cheek patch on the white face was darker than the gray of the top of the head. There was dark streaking on the sides and a small black area on the throat; the breast and abdomen were clear white. The diagnostic yellow spot in front of the eye was not seen during the first observation. During subsequent observations, in better light, the yellow spot was evident. The bird's movement were frequent and quick, very much like a kinglet.

The bird was again seen on 6 and 7 January, when it was feeding in Live Oaks (*Quercus virginiana*) on Lake Shore Drive several blocks from the site of the first observation. It was not located between 7 and 16 January, but was seen daily from 16 to 22 January in the same general location. It was observed by numerous other bird watchers during this period.

The warbler regularly traveled with a loose flock of small land birds that included Tufted Titmice (*Parus bicolor*), Carolina Chickadees (*Parus carolinensis*), kinglets, nuthatches, Yellow-rumped Warblers (*Dendroica coronata*), and Solitary Vireos (*Vireo solitarius*). The Black-throated Gray Warbler was observed to feed only in Live Oaks after the initial observation in a Carolina Laurel Cherry. It often remained in the same tree for 15 to 20 minutes, working its way across the crown of the tree at the outer tips of the limbs.

This represents the second published observation of the Black-throated Gray Warbler in North Carolina. The first record was of a bird observed on 30 December 1965 at Orton Plantation in nearby Brunswick County (Chat 30:18, 24). There are also two records from coastal South Carolina, the first from Charleston on 13 December 1941 (South Carolina Bird Life, 1949, p. 456) and the second on 29 March 1972 at Wadmalaw Island near Charleston (Chat 48:16).

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1986 unless otherwise indicated)

HORNED GREBE: One in breeding plumage was late in departing at Cedar Island, N.C., where seen from 18 to 22 June by Tony White, Jack Schultz, and John Fussell.

CORY'S SHEARWATER: John Fussell found one dead on the beach at Core Banks, N.C., on 8 July, and three were seen at Cape Hatteras point, N.C., on 26 July by Merrill Lynch and others.

GREATER SHEARWATER: This species frequently suffers die-offs in early summer; thus, not surprising were individuals found dead on the beach at Core Banks by John Fussell on 30 June and 8 July.

BAND-RUMPED STORM-PETREL: Counts of seven on 19 July off Oregon Inlet, N.C., and eight off Hatteras Inlet, N.C., on the following day (Robert Ake, Paul DuMont, and party) were somewhat typical for the species off that state's coast in recent summers.

- WHITE-TAILED TROPICBIRD:** One was seen off Oregon Inlet on 18 June, fide Barry Truitt.
- AMERICAN WHITE PELICAN:** Tony White and Jack Schultz saw one on 19 June in Pamlico Sound, N.C., midway between Cedar Island and Ocracoke Island.
- DOUBLE-CRESTED CORMORANT:** The species again nested at Jordan Lake, N.C., where Kathy Kuyper observed three active nests north of US 64 in early June. The only other known nesting site in the state is Lake Ellis Simon in Craven County.
- ANHINGA:** Moderately large numbers apparently still nest rather far inland at Boykin Mill Pond in Kershaw County, S.C., where 25+ were seen during the summer by Robin Carter and Caroline Eastman. Single birds, probably nonbreeders, were seen north of the normal range at Merchants Millpond State Park, N.C., on 10 June (Floyd Williams, Paul Hart) and in Company Swamp along the Roanoke River southwest of Windsor, N.C., on 26 June (Wilson Laney, Dennis Stewart, David Cobb).
- TRICOLORED HERON:** Among the scattered inland records of post-breeding birds, almost all of which are immatures, was an adult at Lake Hartwell near Fairplay, S.C., on 27 July (Charlie Wooten).
- REDDISH EGRET:** An excellent count of three egrets, all immatures, was made by Bob Cowgill at Kiawah Island, S.C., from 10 to 24 July. John Cely reported two immatures at Huntington Beach, S.C., on 11 July, and one was there on 24 July (Bill Hilton Jr.). In North Carolina, an immature was seen by John Hardwick and others at Lea Island near Topsail Beach from 6 to 11 July.
- BLACK-CROWNED NIGHT-HERON:** Douglas McNair heard one calling in flight at dusk at Highlands, N.C., on 4 June, a most unusual date and location for this species.
- YELLOW-CROWNED NIGHT-HERON:** At least three adults were seen along the Black River, N.C., on the Pender-Bladen County border, on 6 April by Merrill Lynch. Suitable breeding habitat exists in the area. In the piedmont were single birds at Raleigh, N.C., on 29 June (Derb Carter) and at Clemson, S.C., on 10 June (Charlie Wooten).
- BLUE-WINGED TEAL:** A male was present at Sunset Beach, N.C., on 15 June, as noted by Ricky Davis. Breeding at this location is a possibility.
- BLACK SCOTER:** One male seen by Perry Nugent and party on 26 July at Folly Beach, S.C., was unusual for the summer season.
- BLACK VULTURE:** One to two were seen on several occasions in June and July 1985 by Douglas McNair at the Brevard Fish Hatchery in Transylvania County, N.C. The distribution of the species in the mountain region is poorly known, and no breeding has been documented in recent years.
- OSPREY:** The species was again noted nesting on large lakes in the North Carolina piedmont. At least four active nests were found at Jordan Lake (Kathy Kuyper), one nest was again present at Lake Townsend near Greensboro (Herb Hendrickson), and several nests were noted at Lake Norman (Dick Brown, Robert Siler). One bird was seen soaring over Linville Gorge, N.C., on 22 June by Mark Simpson.
- BALD EAGLE:** The largest concentration of eagles in the Carolinas occurs each summer at Jordan Lake, where the peak counts of post-breeders were 51 in July and 53 in August (many observers, data supplied by Deborah Paul).
- SHARP-SHINNED HAWK:** Jay Carter saw an adult carrying food near Pinehurst, N.C., on 8 June for the first breeding evidence for the species in that state's Sandhills region. Bill Hilton Jr. saw one hawk near York, S.C., on 16 June.
- COOPER'S HAWK:** One was noted by Jay Carter near Pinehurst, N.C., on 22 June.
- BROAD-WINGED HAWK:** An adult was seen along NC 24 west of Morehead City, N.C., on 19 June (Tony White, Jack Schultz). Other notable coastal-plain records were one seen from April through late July at Columbia, S.C. (John Cely, Lex Glover) and several in the Sumter, S.C., area during summer (Evelyn Dabbs).

GOLDEN EAGLE: An immature was again seen at the Brevard (N.C.) Fish Hatchery during June by Douglas McNair.

AMERICAN KESTREL: Dick Brown reported that young were found by various observers in many towns in the southern piedmont of North Carolina—Charlotte, Lexington, Hickory, Huntersville, and Spencer—and at Cowans Ford Dam on Lake Norman. Another young kestrel fledged near downtown Asheville, N.C., on 19 June (fide Dick Brown).

BLACK RAIL: New breeding-season locations were near Hobucken, N.C., where John Fussell heard one calling in late May, and at Topsail Island in Onslow County, N.C., where Gilbert Grant heard another on 1 June.

COMMON MOORHEN: Locally rare was a pair plus one young seen at New Bern, N.C., on 26 July by Bob Holmes.

LESSER GOLDEN-PLOVER: Rare and late was one seen by Perry Nugent and party near the North Santee River, S.C., on 3 May.

BLACK-NECKED STILT: Nesting was again noted in North Carolina near Aurora along the Pamlico River (John Fussell, Ray Winstead), near Beaufort along the North River (Fussell), and on Eagle Island near Wilmington (Kitty Kosh, Jeremy Nance).

AMERICAN AVOCET: One was notable at Eagle Island near Wilmington on 11 July (Jeremy Nance, Kitty Kosh).

LONG-BILLED CURLEW: John Fussell and others saw one at Portsmouth Island, N.C., on 27 July.

RED KNOT: A good count for early summer was 30 at Portsmouth Island on 27 June (John Fussell).

SEMIPALMATED SANDPIPER: Out of season, apparently a very early migrant, was one seen on 25 June by Ricky Davis at Jordan Lake, N.C.

PURPLE SANDPIPER: Perry Nugent and party saw six late birds at Huntington Beach State Park, S.C., on 3 May.

CURLEW SANDPIPER: Apparently regular at Portsmouth Island in summer, one was observed there on 27 July and 8 August by John Fussell and others.

RUFF: Jeremy Nance noted one in near breeding plumage—considerable black on the head, neck, breast, upper belly, and back—at Eagle Island near Wilmington on 10 July. Most sightings of Ruffs in the Carolinas are of birds in nonbreeding plumage.

SHORT-BILLED DOWITCHER: Locally scarce were individuals seen near Greensboro, N.C., on 16 July (Herb Hendrickson) and at Fayetteville, N.C., on 25 July (Philip Crutchfield).

PHALAROPE (Sp.?): A phalarope was seen resting and feeding on the water at Jordan Lake on 4 June by Kathy Kuyper. [Details provided were not sufficient enough to distinguish between Red and Red-necked.—HEL]

CASPIAN TERN: One seen by Herb Hendrickson near Greensboro was somewhat early on 10 July.

SOOTY TERN: An adult was seen at a tern colony at Cape Hatteras point, N.C., on several dates from 4 June to 12 August (Sam Cooper, Marcia Lyons, et al.); no evidence of nesting was found.

COMMON BARN-OWL: Seldom reported in the mountains, one was found dead in Buncombe County, N.C., on 11 June (Ruth Young).

NORTHERN SAW-WHET OWL: Mark Simpson heard one calling within the Shining Rock Wilderness Area on 13 June. The exact location was the northwestern slope of Flower Knob, at an elevation of 5200 feet. Alan Smith saw one on the southwestern slope of Point Misery, on the Buncombe-Yancey County line, N.C., on 19 June, in a spruce forest.

WHIP-POOR-WILL: The species was found by Douglas McNair to be locally common in the Cashiers, N.C., area during the summer, ranging upward to 3800 feet in elevation.

Most summer records in the mountains occur below 3000 feet.

YELLOW-BELLIED SAPSUCKER: Alan Smith explored much of northeastern Buncombe County, N.C., during May and June; he found several new breeding-season locations for the species. Five birds were found on the west slopes of Big Butt and Little Butt at 4500 feet on 20 and 27 May, and single males were seen just south of Walker Knob and Blackstock Knob on 28 May and 20 June. One was also seen on 28 May and 29 June at Little Fork Ridge.

ALDER FLYCATCHER: Ruth and Jerry Young found three nests with eggs at the "Graveyard Fields" along the Blue Ridge Parkway, N.C., on 7 June. Mark Simpson had three singing birds on Grassy Cove Top at an elevation of 5500 to 5800 feet in the Shining Rock Wilderness Area, N.C., from 6 to 14 June. Also in the wilderness area was one singing on the northeast slope of Craggy Pinnacle at 5600 feet on 15 June (Simpson). Alan Smith had single birds singing on 2 and 12 June just south of Big Butt (on the Buncombe-Yancey County line) and on 20 June between Craggy Dome and Craggy Pinnacle in northeastern Buncombe County.

EASTERN PHOEBE: At a very high elevation was one singing, but not considered to be on territory, at 6400 feet on Mount Mitchell, N.C., on 25 and 26 June (Douglas McNair).

GREAT CRESTED FLYCATCHER: Rick Knight noted a calling bird at Carver's Gap on Roan Mountain, N.C., on 6 June, a very high elevation for the species.

HORNED LARK: Evelyn Dabbs and Jimmy Beatty had a good total of six to eight pairs in a large field near Sumter, S.C., on 18 May. Also near the eastern edge of the breeding range was one singing on territory just northwest of Hamilton, N.C., on 26 May (Merrill and Karen Lynch).

TREE SWALLOW: Possibly a breeder was an adult seen by Philip Crutchfield on 21 June east of Valle Crucis, N.C., near the Watauga River. Jeremy Nance saw an immature on the noteworthy date of 15 June near Wilmington.

CLIFF SWALLOW: This swallow continues to expand its breeding range at reservoirs in the piedmont. Paul Hart reported nests at the SC 49 bridge over Lake Wylie, S.C., during the summer. The species was seen on 4 April at Parr Reservoir in Newberry County, S.C., by Robin Carter, who believes it may be nesting there. One swallow was nest-building at the Falls Lake dam in Wake County, N.C., on 31 May (Karen and Merrill Lynch). Also at Falls Lake, nests were seen by Merrill Lynch and Harry LeGrand under two bridges crossing the middle of the lake.

BROWN-HEADED NUTHATCH: Continued breeding occurred during the summer in Asheville, N.C., as at least one fledgling was seen with two adults near Gail Whitehurst's yard in that city.

GOLDEN-CROWNED KINGLET: Charlie Wooten noted a singing bird at the Walhalla Fish Hatchery in Oconee County, S.C., on 12 June. The kinglet, possibly one of several birds noted on 26 May, was also seen carrying food, but no additional nesting evidence was found. This appears to be the first suggestion of breeding by the kinglet in South Carolina.

BLUE-GRAY GNATCATCHER: A migrant was at a high elevation of 4200 feet near Cashiers, N.C., on 24 April (Douglas McNair).

CEDAR WAXWING: Floyd Williams and others noted a few birds all summer at Merchants Millpond State Park, N.C., with two adults and two juveniles being seen on 19 July. Two waxwings were seen in eastern Greenville County, S.C., on 8 June and two more were noted at Clemson, S.C., on 3 July (Charlie Wooten). Ramona Snively reported that a nesting colony was again present at Tanglewood Park in southwestern Forsyth County, N.C., from 30 May to 10 July. Twelve nests were found, but only three were active for certain.

- SOLITARY VIREO:** Dorothy Foy reported that an immature she banded at Oriental, N.C., in the summer of 1985 returned to her yard and was netted on 16 July (1986). The species is not known to nest in the coastal plain of that state except sparingly in the Sandhills.
- WARBLING VIREO:** Apparently the first summer record for the North Carolina coastal plain suggestive of nesting was one bird seen singing on territory in eastern Halifax County on 7 June by Merrill Lynch and Harry LeGrand. The habitat—a cypress pond—is not typical for the species. Another new breeding-season record, the southernmost for the mountains in recent years, was one seen and heard singing on 5 June along the west bank of the French Broad River about ½ mile N of NC 280 (Alan Smith).
- CHESTNUT-SIDED WARBLER:** Rare in summer in South Carolina were a singing male and a female seen several times in June and July by Irvin Pitts at Caesar's Head State Park.
- MAGNOLIA WARBLER:** This species appears to be erratic, as well as rare, in the summer in the North Carolina mountains. Alan Smith noted one or two singing birds on 17 June and 5 July near Point Misery along the Buncombe-Yancey County line. The habitat was ecotone between spruce and hardwood forests.
- CERULEAN WARBLER:** At a very low elevation for the mountains was one noted singing on territory at Tryon, N.C., in May and June by Simon Thompson. Another was singing at 4300 feet, a very high elevation, about a mile southeast of Craggy Knob in Buncombe County on 19 June (Alan Smith).
- WORM-EATING WARBLER:** An excellent breeding-season count was 20 singing birds noted by John Fussell in the Green Swamp area of Brunswick County, N.C., on 7 June. This species is more widespread in the southern coastal plain of that state than formerly believed, occurring in many areas of extensive pocosin vegetation.
- SCARLET TANAGER:** Seldom found in summer in the Sandhills, a male was seen in Long-leaf Pine/Turkey Oak woods near Hoffman, N.C., on 19 June by Phil Manor.
- DICKCISSEL:** Ricky Davis found two pairs on territory at Lake Raleigh in Raleigh from 10 May into June. At least one juvenile was seen in early July by Harry LeGrand at that site. Paul Hart noted a male on territory from 11 May into June near Kings Mountain, N.C., but no evidence of nesting was seen. In the vicinity of Townville, S.C., as many as six males and two females were seen from early June to late July by Charlie Wooten, who saw a female with two juveniles on 27 July.
- BACHMAN'S SPARROW:** Robin Carter did much ornithological field work in the South Carolina piedmont, finding two Bachman's in Chester County on 1 June, one in Union County on 28 June, and one in Saluda County on 27 July. All were found in clear-cuts.
- GRASSHOPPER SPARROW:** Near the edge of the breeding range were several singing birds about 8 miles S of Goldsboro, N.C., on 6 July (Eric Dean). Also near the edge of the range was a singing male about 2.5 miles E-NE of Speed, N.C., on 26 May (Merrill and Karen Lynch). An excellent count was about 30 birds in a large weedy field near Cross Keys, Union County, S.C., during the summer, as noted by Robin Carter.
- HENSLOW'S SPARROW:** A first summer record for South Carolina in several decades was one singing in a weedy field near Cross Keys from 1 June to 4 July (Robin Carter). Carter saw three birds on 22 June. John Fussell noted singing birds at several sites in southwestern Onslow County, N.C., near NC 50 during the summer. At previously known sites, Merrill Lynch tallied 14 singing birds near Hassell, N.C., and 12 singing birds east of Speed, N.C., on 26 May. These North Carolina birds were all in recently clear-cut areas growing up in weeds and young pine seedlings.
- SEASIDE SPARROW:** At least 60 territorial birds were counted by Philip Crutchfield and party in marshes in northeastern Pamlico County, N.C., on 20 July.
- SONG SPARROW:** Near the edge of the breeding range was one singing at the dam of Falls Lake near Raleigh on 31 May (Merrill and Karen Lynch).

LINCOLN'S SPARROW: Belatedly reported were individuals seen by Bruce Mack about 11 miles SE of Columbia, S.C., on 26 and 29 October 1972 and about 29 miles SE of that city on 14 April 1985.

DARK-EYED JUNCO: This species is a rare nester in South Carolina; thus, notable were two adults feeding three juveniles at the Walhalla Fish Hatchery on 12 June (Charlie Wooten) and nests found by Irvin Pitts at Caesar's Head in 1985 and 1986.

YELLOW-HEADED BLACKBIRD: Most unusual was an adult male seen at Folly Beach, S.C., from 24 to 28 July by Vivian Hembree and Will Post.

HOUSE FINCH: Douglas McNair noted a singing male at Cashiers, N.C., on 7 June, plus a female at a feeder there on the same day. Also near that town was one finch at High Hampton Inn on 28 July (McNair).

RED CROSSBILL: Out of season was a female or immature at a feeder in Chapel Hill, N.C., on 11 and 12 June (Carol Hamilton, Dennis Alwon).

PINE SISKIN: Adults are seen regularly in the mountains in summer, but without evidence of nesting; this apparently was the case with the 25 birds seen by Mark Simpson at Mount Mitchell on 8 and 15 June.

BOOK REVIEWS

(Continued from Page 64)

The introduction, a summary of wood warbler characteristics, is representative of the whole book: very informative but by no means dry. Each chapter describes one of the parulids through both anecdotes and references to the literature. Harrison describes habitat, nest sites, nest construction, eggs, cowbird parasitism, diet, song, and behavior. He provides range maps and information on the birds' names—source, pronunciation, and meaning.

The book is spaciouly laid out with readable type, room for notes, and many extremely useful black-and-white photographs and color plates that show habitat, nests, eggs, and behavior. This is a good sourcebook for everyone who is interested in wood warblers, and it invites the novice to discover a difficult but exciting family. We can only hope that Mr. Harrison will next treat us to a book on sparrows.—P.R. FORD-POTTER

CATESBY'S BIRDS OF COLONIAL AMERICA

Alan Feduccia, editor. 1985. The University of North Carolina Press, Chapel Hill and London. Illus. black and white plus 20 color plates. Bibliography. Index. 176 p. Hardcover, \$29.

Mark Catesby (1628-1749), a well-to-do young Englishman, came to Virginia in 1712 and traveled southward through the Carolinas to Florida and the Bahama Islands. Along the way he collected specimens, took notes, and presumably made at least preliminary drawings of the flora and fauna. Upon his return to England in 1726, Catesby began preparations for publishing his monumental *Natural History of Carolina, Florida, and the Bahama Islands*. Production of the two volumes required some 20 years.

Alan Feduccia, a professor of biology at the University of North Carolina at Chapel Hill, has provided a scholarly introduction to Catesby's text and illustrations, 20 of which are reproduced in full color. A list of the current common names of the birds compared with the names Catesby used is very helpful, as are the editor's notes on the plates and text. Dr. Feduccia and the publisher are to be congratulated on making Catesby's *Natural History* available to everyone who is interested in the history of biology.—EFP

**SEASIDE PLANTS OF THE GULF AND ATLANTIC COASTS
FROM LOUISIANA TO MASSACHUSETTS,
EXCLUSIVE OF LOWER PENINSULAR FLORIDA**

Wilbur H. Duncan and Marion B. Duncan. 1987. Smithsonian Institution Press, Washington, D.C., and London. Illus. with line drawings and 588 color plates. Glossary. Index. 409 p. Hardcover, \$45; softcover, \$29.95.

Amateur naturalists, even beginners, should not let the 9 pages of glossary and 16 pages of botanical keys discourage them from buying and using the Smithsonian's guide to the very interesting plants that grow near the ocean. Wildflowers, trees, shrubs, grasses, rushes, and sedges are included. To help the inexperienced botanist learn how to look at plants for identification purposes, the authors have provided six plates illustrating plant structures. Studying these plates should enable the reader to visualize the terms as they appear in the glossary, keys, and plant descriptions. The keys are meant to be used. The type is large enough for easy reading, and the couplets employ a minimum of technical terms. If an unfamiliar word occurs, the structure plates and glossary are close at hand. Headings for the descriptions have the English name in boldface type, followed by the Latin name in the customary scientific style. The number of the color plate is easy to find on a line by itself. The text is written in a telegraphic style (occasionally relieved by a complete sentence) with metric measurements and without an excessive number of abbreviations. English names for plants are capitalized in the descriptions as well as in the headings. Line drawings placed with the descriptive paragraphs supplement the generally excellent color photographs. The authors have skillfully avoided the unnecessary complications and the unfortunate oversimplifications that mar many botanical works intended primarily for the amateur. Their book brings hope that even the grasses can be identified.—EFP



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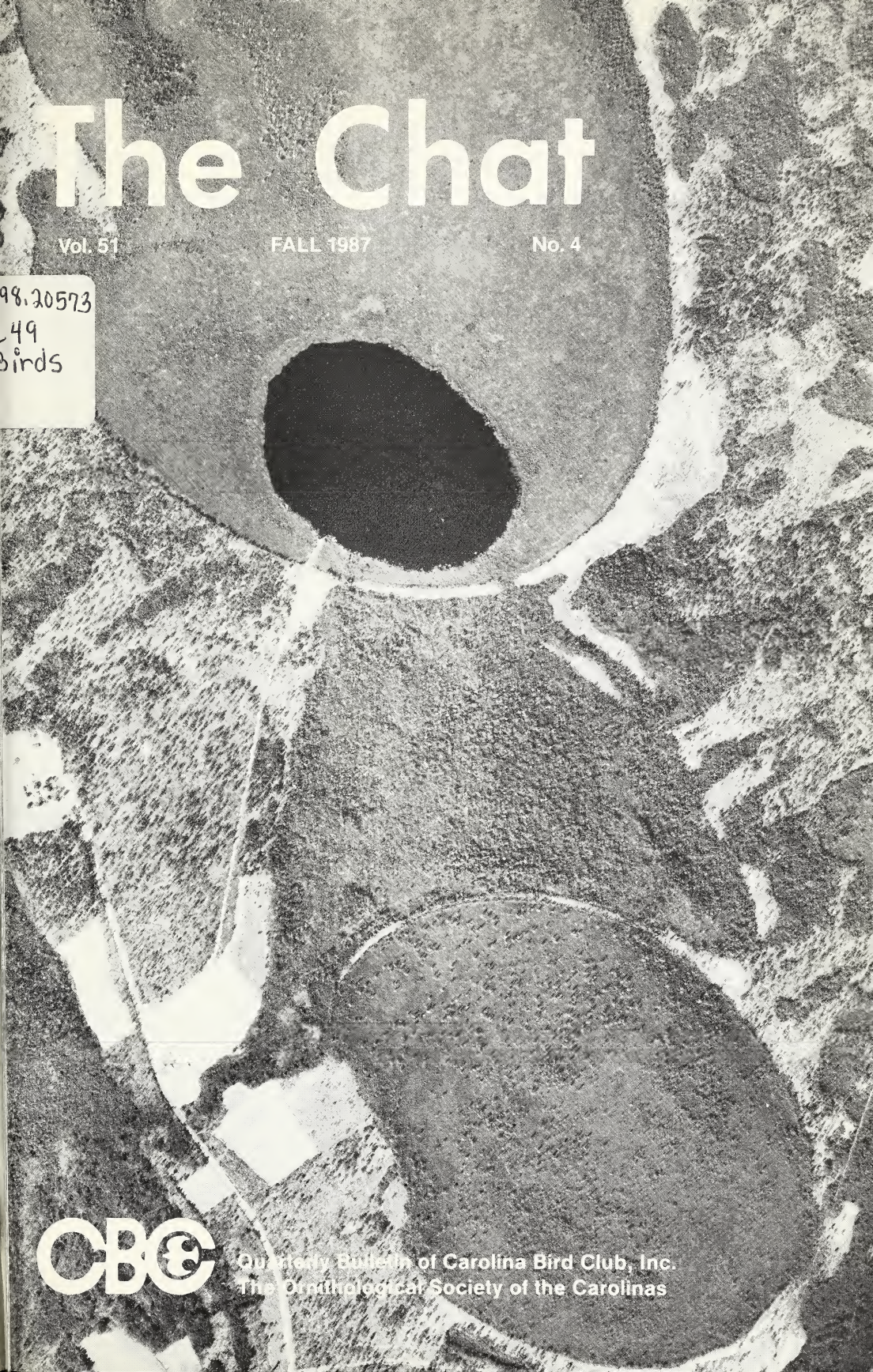
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Editor Eloise F. Potter, Route 3, Box 114AA, Zebulon, N.C. 27597
General Field Notes E. Wayne Irvin, North Carolina Editor
William Post, South Carolina Editor
Briefs for the Files Harry E. LeGrand Jr., 331 Yadkin Drive, Raleigh, N.C. 27609
CBC Roundtable Louis C. Fink, 100 Clyde Morris Blvd., No. 155
Ormond Beach, Fla. 32074
Backyard Birding Gail T. Whitehurst, 52 Lakeshore Drive,
Asheville, N.C. 28801
Bird Count Editor John O. Fussell III, P.O. Box 520,
Morehead City, N.C. 28557
Art and Photography John Henry Dick and Jack Dermid

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OUR COVER—Aerial photographs show Carolina bays in Bladen County, N.C. Note the elliptical shape of the bays, the sand rims, the lake within the bay at top center of the front cover, and the agricultural activity adjacent to bays and occasionally intruding on them (back cover and bottom center of front cover).



Breeding Birds of Carolina Bays: Succession-related Density and Diversification on Ecological Islands

DAVID S. LEE

Information concerning the animal life of Carolina bays or of the plant communities they typically support in the Southeastern coastal plain is minimal (Sharitz and Gibbons 1983, Wilber 1981). Frey (1951), Bailey and Frey (1958), and Louder (1962) studied the fishes of the major Carolina bay lakes, and Lindquist (e.g. Lindquist et al. 1981) has provided intense follow-up studies on many bay-lake fishes. Fuller (1977) reported on the freshwater molluscs of Lake Waccamaw, and Sharitz and Gibbons (1982), in a review of what is known of the animal life of bays, presented some original information on herpetofauna. Recently Clark et al. (1985) reported on the mammal fauna of pocosins and Carolina bays of eastern North Carolina.

Published information on the bird life of Carolina bays, however, was essentially limited to only two brief reports on aquatic species associated with water-filled bays by Norris (1957) and Post (1969), who conducted studies of individual Carolina bays near Williston, Barnwell County, S.C. Additionally, Clark and Potter (1982) presented a profile of the breeding birds of six plant communities on the North Carolina Biological Survey study site near McCain, Hoke County, N.C. One of these Hoke County communities is a high-shrub pocosin formed in a 5-acre Carolina bay, from which they reported 21 species of nesting birds. All three of these bird studies were overlooked in recent summaries of Carolina bay fauna. Lee (1986) provided an overview of the bird life of North Carolina pocosins and associated plant communities, including some study sites in Carolina bays. With these exceptions, information on the resident bird life of Carolina bays is limited to scattered reports of sightings of locally unusual birds (e.g. Crutchfield and Whitfield 1987). The present study will characterize the breeding-bird fauna for Carolina bays in southeastern North Carolina with the emphasis on terrestrial species.

CHARACTERIZATION OF CAROLINA BAYS

The term "bay" is confusing in that it refers to a number of successional stages of Southeastern wetlands that support several species of bay trees (Sweet Bay, *Magnolia virginiana*; Red Bay, *Persea borbonia*; and Loblolly Bay, *Gordonia lasianthus*), while the term "Carolina bay," partly named for the presence of these bay trees, refers to elliptical depressions that often support various plant communities, including pocosins and bay forests. Carolina bays are permanent geological features and are often specifically named sites (e.g. Jerome Bay, Bladen County, N.C.), whereas bay forests are successional stages of wetlands. Unlike most other wetlands in the Southeast, Carolina bays often lie within xeric and mesophytic systems. Their islandlike nature usually makes them visually delineated and ecologically discrete (Fig. 1 and 2). The wide spectrum of successional stages found

within the bays, combined with their close proximity to each other, makes them excellent study sites (Clark et al. 1986). In my principal study areas in Bladen County, the bays are highly concentrated, and here successional stages probably achieve their greatest diversity.

The first description of Carolina bays was made by John Lawson (1709) in the early 1700s. His descriptions of plant communities near the Santee River in South Carolina were of bay vegetation, and it is believed that in his travels he crossed Cante Bay, a site now flooded by Lake Marion. In July of 1765, while visiting his brother's home on the Cape Fear River in Bladen County, N.C., John Bartram entered in his journal notes about visits to two bay lakes now believed to have been White Lake and Singletary Lake. A few days later, accompanied by his son William, he visited Lake Waccamaw (Harper 1942, Savage 1970), a bay lake in Columbus County, N.C.

The peculiar elliptical nature of Carolina bays went unnoticed, however, until 1847, when Michael Tuomey, the state geologist of South Carolina, described numerous circular depressions in the Barnwell District (Tuomey 1848). He commented on the possible origin of these bays. In 1895 Learidas E. Glenn, superintendent of schools at Darlington, S.C., wrote of Carolina bays and noted many characteristics each bay had in common (Glenn 1895). Later students of geology, most of whom were unaware of these earlier works or chose to ignore them, published articles on the mystery of the origin of Carolina bays. Of these Smith (1931) wrote the most comprehensive treatment.

In 1930, in order to assist in evaluation of timber, Myrtle Beach Estates had 500 square miles around the Myrtle Beach area photographed from the air. The photographs revealed for the first time the number and geometrical perfection of Carolina bays, leading researchers to suspect that the bays were formed by a meteor shower (Melton and Schriver 1933). In 1933 Congress enacted the Agricultural Adjustment Act in an effort to alleviate a growing farm crisis. One result was a complete aerial photogeographic assessment of the Southeast. Surprisingly the photographs revealed 83,000 square miles of area in which bays were present, with the bays themselves occupying about 10% of the land area, and in some places such as Bladen County, N.C., most of the land surface was covered with bays. There were even bays within bays! All told, researchers estimated more than half a million Carolina bays, with more than 140,000 exceeding 500 feet in length.

Since the discovery made from aerial photography, the mystery of the origin of Carolina bays has been a source of scholarly debate. Paleobotanists, botanists, geologists, and others have proposed theories ranging from glacial-period wave action back to meteors. Savage (1982) provides an intriguing and up-to-date history of the study and mystery surrounding the origin of Carolina bays, though Johnson's (1942) book is perhaps a more scholarly treatment. The most logical explanation appears to be a progressive series of events ["Hypothesis of Complex Origin" of Johnson (1942)] that leads to the characteristic geological features of the bays.

Carolina bays occur between southern Maryland and Florida, reaching their greatest abundance in southeastern North Carolina and adjacent South Carolina (Savage 1982). Bays range in size from only a few acres to many hundreds of acres. An exposed sand rim of varying width marks each bay's perimeter. Many bays have

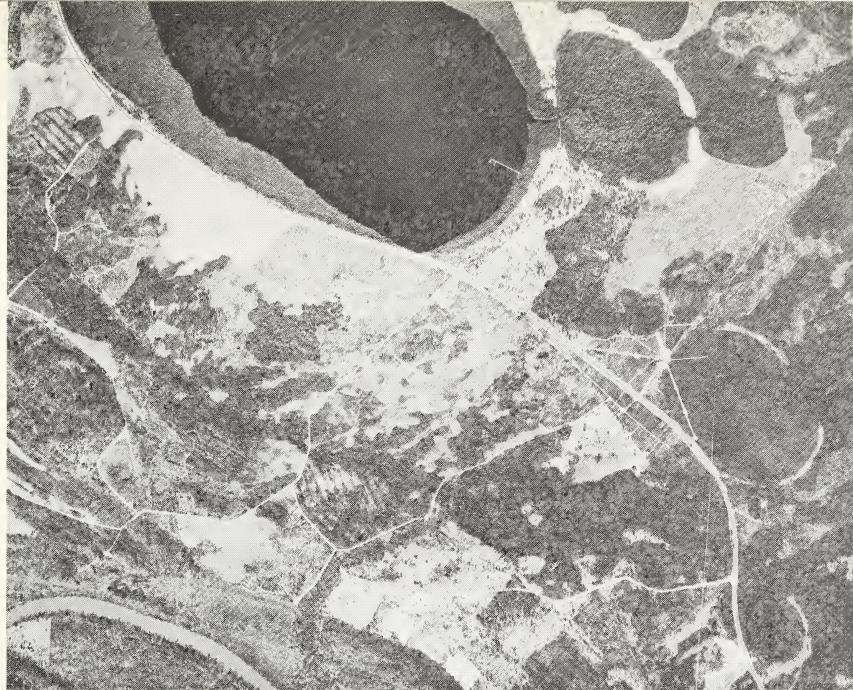


Fig. 1a. Singletary Lake (a bay lake within a Carolina bay) and adjacent unnamed bays, Bladen County, N.C. A portion of the Cape Fear River and NC 53 can also be seen in the photograph.

Fig. 1b. Small unnamed Carolina bays along the Cape Fear River, Bladen County, N.C. Note variation in the extent of the sand rims on the southeast side of the bays and the similar orientation of the bays of different sizes. Variation in the type and extent of forest cover can be seen (note foliage contrast between evergreen and deciduous trees, and the sparseness of the trees in the bay in upper center of photograph).



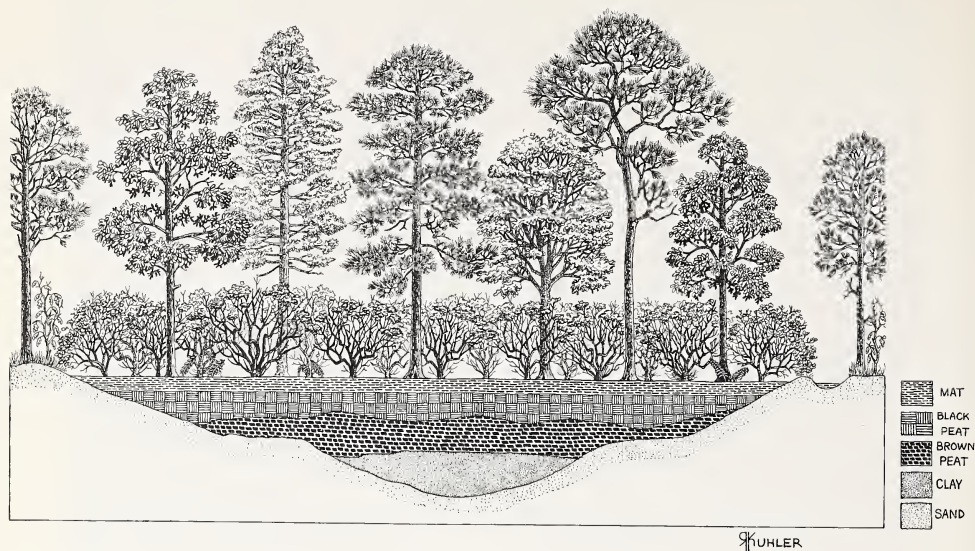


Fig. 2a.

Fig. 2b.

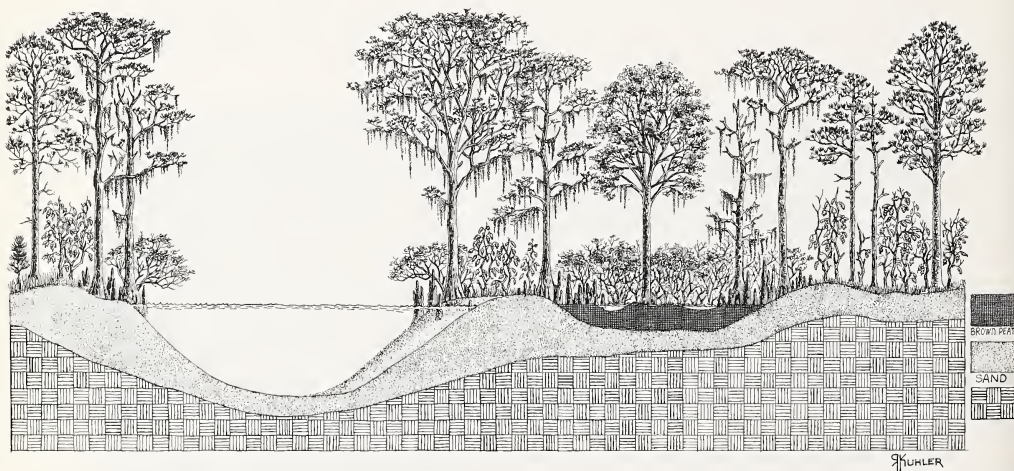


Fig. 2a,b. Profiles of two Carolina bays. Upper illustration shows relation of plant community to shallow bay depression. Lower illustration is of a bay lake within a Carolina bay. Again the basin of the bay is quite shallow. The successional relation of bay lakes to the larger depression is not clear.

multiple sand rims. Naturally wetter at all seasons than are most surrounding areas, bay depressions contrast markedly with their dry sand rims, which support xeric plant communities. Many, perhaps most, Carolina bays contain pocosin plant communities in various serial stages, but some also contain sizable lakes, ponds, marshes, bogs, and swamps. In many bays natural fires have been suppressed so long that the plant community in them is now mature deciduous bay forest. The elliptical shape and the tendency for the deepest portion of the depression to be southeast of the center often causes concentric vegetative zonation rings in the interior of the bay as well as an ecotonal ring around the perimeter (Fig. 2). This pattern of vegetative zonation, combined with the xeric nature of the sand rim and pronounced edge effects, allows for considerable faunal diversity, even in small areas.

The characteristic flora and the development of pocosin plant communities within Carolina bays and on other sites in the Southeast have been discussed by Buell and Cain (1943), Kologiski (1977), Clark et al. (1985), and Lee (1986). Lee (1986) graphically illustrated the succession of major plant communities as they relate to fire or other disturbance, soil type, and hydroperiod. The nature of succession of the bird fauna as it relates to development of pocosin and bay forest communities, the major terrestrial communities developing in Carolina bays, was also presented by Lee (1986). The findings of that study are similar to the vegetative influences on bird communities discussed below.

METHODS AND STUDY SITES

Conducted over a 5-year period between 1980 and 1985, this study is based on more than 100 field days, approximately one-fourth of these including evenings spent listening for nocturnal birds. Methods of censusing were described in detail by Lee (1986). Inventories (species list and species dominance) were compiled for all sites and habitats surveyed. In that the density of the plant cover made it impractical to survey many of the bays by traditional spot mapping or transect methods, a more expedient comparative method was necessary. Counts of singing males were made for each bay (and each habitat within a bay) from walked transects and from scattered specific stations within, as much as possible, pure stands of certain habitat types. Each bay was revisited at different periods of the nesting season (late April to late June). For crude comparisons of density in different bay communities, I simply averaged the number of resident birds encountered per minute during prime survey hours (0600-0800) and seasons (mid-May through the first week of June). Study sites were chosen to include a variety of terrestrial vegetation types, with the primary focus being on mature bay forest and shrub pocosin. In that most survey work was done from land, information on aquatic species was simply tallied as to presence or absence, although some effort was made to confirm the nesting of aquatic species from boats and canoes in the late spring and early summer of 1984.

The following Carolina bays were censused systematically, and those marked with an asterisk are the primary sites of study. *Bladen County*: Bay Tree Lake (Black Lake)*, Jones Lake*, Little Singletary Lake, Salters Lake*, Singletary Lake*, Suggs Mill Pond (Horseshoe Lake), White Lake*, Wamm Squam Bay*,

Jerome Bay (on Cumberland/Bladen Co. line), Smith Mill Pond (on Sampson/Bladen Co. line), one unnamed bay 9 miles N of Elizabethtown on NC 242, one unnamed bay 1.6 miles E of Kelly on NC 53, and another 10 miles E of Kelly on NC 53. *Columbus County*: Lake Waccamaw. *Hoke County*: Bay on North Carolina Biological Survey study site at McCain*.

Information on the date when a particular bay was last completely burned was obtained from local residents, the North Carolina Forest Service, or both.

CHARACTERISTICS OF BIRD LIFE

A total of 107 species of nesting and summering birds have been recorded from Carolina bays (Table 1). Of these, nine are simply regarded as summer visitors, although individuals of most nest in nearby areas or adjacent habitats. Twenty-five (23.4%) of the nesting and presumed nesting species are aquatic or semiaquatic. These figures attest to the habitat diversity provided by Carolina bays in that the combined tallies include nearly all nesting species associated with the inner coastal plain of the Carolinas. As will be pointed out later, several species breeding at the limit of their range appear to be associated exclusively, or nearly so, with Carolina bays.

Table 1 lists by habitat and known or presumed nesting status all avian species found in association with Carolina bays during this and other studies. Birds found in ecotonal communities around natural openings resulting from fire damage, wind-thrown trees, and lake edges within the forested bay are included in the figures and tables under bay forest, but censusing of interior bay communities was conducted in a manner that kept encounters with these species to a minimum. Most of the species found in this study are ubiquitous. Those birds that seem noteworthy from either geographical or ecological perspectives are discussed in Appendix A.

DIVERSITY/DENSITY

If the terrestrial Carolina bay fauna is analyzed as it relates to serial successional stages, the bird life exhibits a spectrum ranging from species found in low shrubs to those of the mature, closed-canopy forest. Because the thick rootstocks of bay vegetation persist after fires in the moist bay soil, it is unusual for the pioneering grass/sedge (old-field) successional stages to become established in Carolina bays. Along a similar line, Atlantic White Cedar (*Chamaecyparis thyoides*) can seldom become established in large numbers because of the competitive nature of the shrub community (see Clark et al. 1986). Nevertheless, a White Cedar forest was present in Jerome Bay. Because I did not find this forest to be typical of bays I studied, this community is not discussed here (see Lee 1986 for a characterization of the fauna of White Cedar stands).

Although bays with transitional plant communities were studied, the focus of the field work was on Carolina bays in distinct vegetative stages. Figures 3 through 6 and Table 1 compare bays having (1) early shrub successional stages—low shrub pocosins surveyed 1 to 5 years after intensive fire, (2) full-term shrub regeneration—high shrub pocosin surveyed approximately 10 to 30 years after intensive fire, (3) young bay forest surveyed 40 years after burning, and (4) mature bay forest that had not burned for at least 60 years.

TABLE 1. Summer birds of Carolina bays. X = nesting or presumed nesting, O = regular visitor, + = irregular visitor (1-5 records). Fly-overs are not included. Sources for species not encountered in this study are indicated by footnotes. Species listed under Bay Lakes and Altered include *only* birds primarily associated with these habitats or ones whose populations expand in these areas. The other four habitat lists contain all species encountered.

SPECIES	HABITATS					
	Sand Rims	Bay Lakes, Marshes	Forest	High Shrub	Low Shrub	Altered
Pied-billed Grebe		X ¹				
Double-crested Cormorant		O				
Anhinga						X
American Bittern		+ ²				
Least Bittern		X ^{1,2}				
Great Blue Heron		O				O
Great Egret		O				O
Little Blue Heron		+ ²				
Cattle Egret						O
Green-backed Heron		X		O		X
Yellow-crowned Night-Heron		+ ²				
White Ibis		O				O
Wood Duck	X	X	X	O		X
American Black Duck		X				
Mallard		X				X
Black Vulture	X		X			
Turkey Vulture	X		X	X	X	
Osprey		O				
Bald Eagle		X				
Red-shouldered Hawk			X			
Red-tailed Hawk	X				X	
American Kestrel						+
Wild Turkey	+					
Northern Bobwhite	X		X	X	X	X
King Rail		X ¹				
Purple Gallinule		+ ²				
Common Moorhen		X ¹				
American Coot		X ¹				
Limpkin						+
Killdeer						X
Spotted Sandpiper		O				O
American Woodcock		X ¹				
Rock Dove						X
Mourning Dove	X		X	X	X	
Yellow-billed Cuckoo	X		X	X	X	
Eastern Screech-Owl	X					
Great Horned Owl	X					
Barred Owl	X		X			
Common Nighthawk	X					
Chuck-will's-widow	X			X		

TABLE 1. Continued.

SPECIES	Sand Rims	Bay Lakes, Marshes	HABITATS			
			Forest	High Shrub	Low Shrub	Altered
Whip-poor-will	X					
Chimney Swift	O		O	O		
Ruby-throated Hummingbird	X		X			
Belted Kingfisher		O		+		X
Red-headed Woodpecker				X	X	
Red-bellied Woodpecker			X	X	X	
Downy Woodpecker	X		X	X		
Hairy Woodpecker				X		
Red-cockaded Woodpecker	X					
Northern Flicker	X					
Pileated Woodpecker	O		X	X	X	
Eastern Wood-Pewee	X		X			
Acadian Flycatcher			X			
Great Crested Flycatcher	X		X	X	X	
Eastern Kingbird		O		X	X	
Purple Martin				O		X
Northern Rough-winged Swallow						X
Barn Swallow						X
Blue Jay	X		X	X	X	
American Crow	X		X	X	X	
Fish Crow	X		X	X	X	
Carolina Chickadee	X		X	X	X	
Tufted Titmouse	X		X	X	X	
White-breasted Nuthatch	X					
Brown-headed Nuthatch	X		X	X	X	
Carolina Wren			X	X		
Blue-gray Gnatcatcher	X		X	X		
Eastern Bluebird	X			X		
Wood Thrush			X	O		
American Robin						X
Gray Catbird			X	X	X	
Northern Mockingbird						X
Brown Thrasher			X	X		
Loggerhead Shrike						X
European Starling		X		O		X
White-eyed Vireo			X	X		
Red-eyed Vireo			X	X		
Northern Parula			X			
Black-throated Green Warbler			X	X		
Yellow-throated Warbler			X	X		X
Pine Warbler	X		X	X	X	
Prairie Warbler			X	X	X	
Black-and-white Warbler			X			
American Redstart			X			

TABLE 1. Continued.

SPECIES	Sand Rims	Bay Lakes, Marshes	HABITATS			
			Forest	High Shrub	Low Shrub	Altered
Prothonotary Warbler			X	X		
Worm-eating Warbler			X	X		
Swainson's Warbler			X			
Ovenbird			X			
Louisiana Waterthrush			X			
Kentucky Warbler			X	X		
Common Yellowthroat			X	X	X	
Hooded Warbler			X	X		
Yellow-breasted Chat			X	X	X	
Summer Tanager	X					
Northern Cardinal	X		X	X	X	
Blue Grosbeak	X					
Indigo Bunting	X			X		
Rufous-sided Towhee	X		X	X	X	
Bachman's Sparrow	X					
Chipping Sparrow	X					
Field Sparrow						X
Red-winged Blackbird		X				
Eastern Meadowlark	X					X
Common Grackle				O		X
Brown-headed Cowbird	X		X	X	X	
Orchard Oriole				X		
American Goldfinch	X			X		
House Sparrow						X
Total Nesting Species (107)	40	-	48	42	24	-

¹Post 1969²Norris 1957

Examining a series of known-age bay communities (1-60+ years), I found a progressive increase in avian diversity and a progressive decrease in population density with age of the plant community (Table 2, Fig. 8). The exception is a sharp decline in density in high-shrub pocosins. Here, although the diversity is still a progression from low-shrub to young-forest birds, the habitat is not really suitable for substantial numbers of birds from either earlier or later successional stages, and none were restricted to this stage. Thus, density in high-shrub communities falls below that found in any other bay habitat studied.

Within given-aged plant communities in any bay, the land-bird fauna was nearly identical. Analysis of birds recorded in three large bays with mature bay forests (the most diverse communities) in Bladen County showed a 96.9% overlap in the fauna.

SAND RIM

Bird associates of sand rims are presented in Table 1 and Figure 7. In general, plant communities of the sand rims, while a characteristic vegetational feature of a Carolina bay's perimeter, were in direct contrast with the pocosin vegetation types within the bays. These sand rims are dominated by Longleaf Pine (*Pinus palustris*), Turkey Oak (*Quercus laevis*), and Wire Grass (*Aristida stricta*). Fire and drainage play an important role in maintaining the xeric open-community structure on the sand rims. The edge effect produced by the contrast between the open canopy and open understory of the sand-rim community and the closed canopy of the mature bay-forest community allow for a dense shrub zone around the perimeter of the bay depression. In this zone small numbers of all the shrub-stage birds of Carolina bays normally could be found.

AQUATIC AND PERIPHERAL SPECIES

The aquatic habitats varied considerably from bay to bay, and there was little similarity or predictable regularity in the aquatic bird life in any of the bays studied. Aquatic species found in bays with permanent water are among the most interesting associates, but many of these are not breeding birds (e.g. herons, Osprey, Limpkin). Some of the aquatic birds are, to date, restricted to bays converted into mill ponds (e.g. Anhinga, White Ibis).

Peripheral populations of several aquatic and woodland birds (e.g. Worm-eating Warbler, Louisiana Waterthrush, Chipping Sparrow) that reach the limits of their breeding distributions in southeastern North Carolina seem to be confined to Carolina bays or pocosin habitats (see Lee 1986). The geological features of the bays provide permanent sites for the aquatic communities and for the successional development of some terrestrial communities that otherwise would not be present locally. For the species associated with shrub communities, the bays may have been

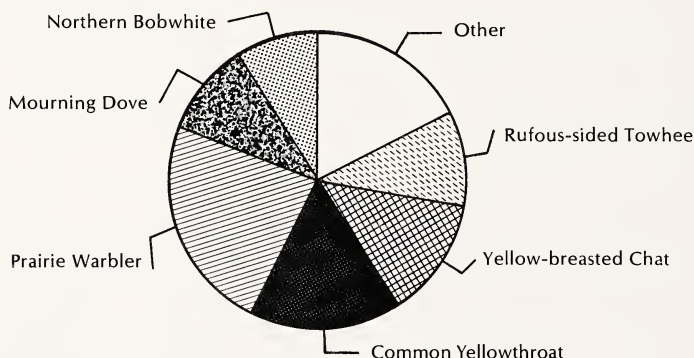


Fig. 3. Faunal composition of a Carolina bay housing a shrub community in a very early stage of succession. Census was conducted 2 years after the vegetation had completely burned. Study site is 9 miles N of Elizabethtown, Bladen County, N.C., on NC 242. The size of the section labeled "other" gives a general idea of the degree of diversity represented in this and the following figures.

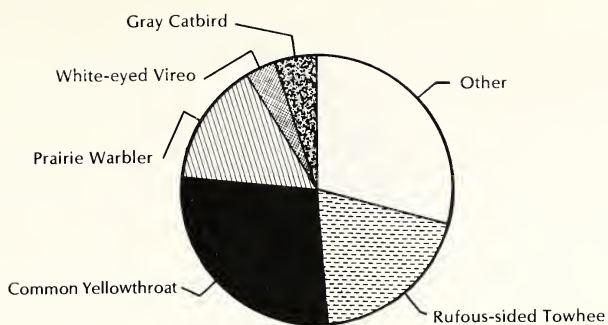


Fig. 4. Faunal composition of Carolina bays housing pocosin (shrub-Pond Pine) communities. Information was pooled from several study sites. Although the exact time period since the last fire was not known for many, all sites were intermediate between what was surveyed in Figures 3 and 5.

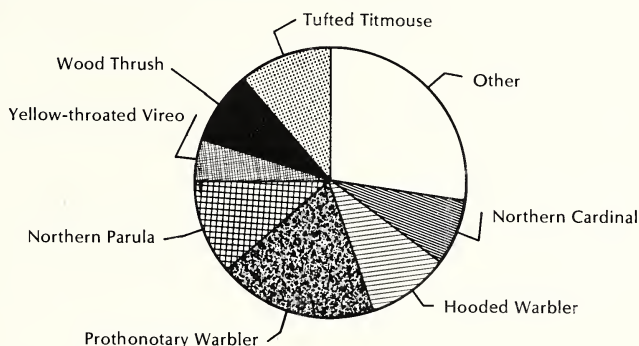


Fig. 5. Faunal composition of Wamm Squam Bay near White Lake, Bladen County, N.C. This bay was surveyed 40 years after a fire had completely burned out the vegetation. At the time of the survey the bay contained a young bay forest that, except for the perimeter, was relatively free of shrub vegetation.

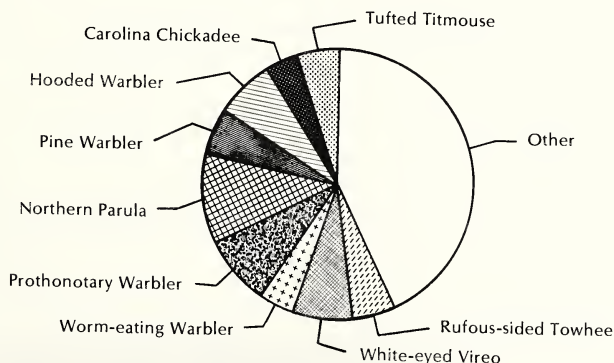


Fig. 6. Faunal composition of mature bay forest growing in various Carolina bays in Bladen Lakes State Park, Bladen County, N.C.

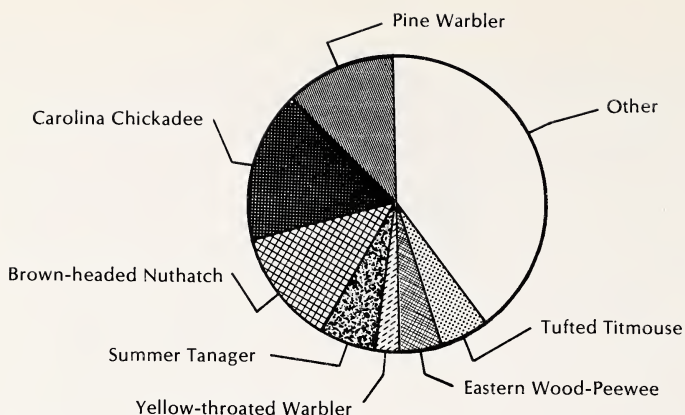


Fig. 7. Faunal composition of Longleaf Pine, Turkey Oak, Wire Grass sandhill communities found on sand rims of various Carolina bays in Bladen County, N.C.

valuable inholdings during the precolonial period prior to massive land clearing and subsequent advance of early vegetative succession.

SPECIES AFFECTED BY DISTURBANCE

Disturbance of bays had various effects on the bird life, obviously varying with the nature and degree of disturbance. Towns and residential development on sand rims provided habitat for American Robins, Northern Mockingbirds, European Starlings, and House Sparrows—species not encountered, or rarely encountered, when bays were in a natural state. Clearing of natural understory of pine and bay forest for residential and recreational cottages at White Lake resulted in an increase in Yellow-throated Warblers, Orchard Orioles, and perhaps other subcanopy species. Draining of bay soils and the planting of blueberry farms provided habitat for many widespread species normally associated with natural, open, shrub-filled bays as well as for the Field Sparrow, a species not found in any natural bays. Flooding of bays for millponds attracted some aquatic species that were not recorded in natural bay lakes. Dead trees resulting from flooding increased the

TABLE 2. Diversity and density of breeding birds in different-aged terrestrial communities in Carolina bays.

	Low Shrub (1 to 3 years after burn)	High Shrub	40-year-old Bay Forest	Mature Bay Forest (60+ years after burn)
Diversity (number species)	19	21	24	44
Density (number individuals encountered per minute)	2.03	.78	1.5	1.34
Total Survey Time (in hours)	3.08	.95	2.15	20.5

habitat suitable for cavity-nesting birds. Docks and piers on developed bay lakes provided nesting sites for Barn Swallows.

CONCLUSIONS

Collectively, Carolina bays support a diverse assemblage of bird species, but unless dissected this statement is somewhat misleading. In that Carolina bays are vegetatively characterized by a succession of fire-responed communities, the diversity could be largely duplicated by surveying equal-sized areas of appropriate-aged habitats almost anywhere in the coastal plain. Successional stages are so diverse that no single group of birds could be considered characteristic of bays. Many of the species are ubiquitous ones found in almost any disturbed community. Those associated with sand rims are typically found throughout the xeric area surrounding the bays. Approximately 10 species are present as a result of alterations by man. The islandlike nature of Carolina bays and variations in the amount of soil saturation in individual bays do, however, arrest development of plant communities and allow various-aged communities to persist in bays in close proximity. In many cases several communities co-exist in the same bay, and large bays typically house plant communities of several ages.

As natural succession progresses in a Carolina bay, bird population density declines and species diversity increases. Although no examples of bays protected from fire or other disturbance for extremely long periods were studied intensively, casual visitations to these sites indicate that both density and diversity decline sharply in advanced-age forest in Carolina bays (Fig. 8). Clark et al. (1985) found a similar pattern in mammal fauna, as did Lee (1986) in a study of birds of pocosins.

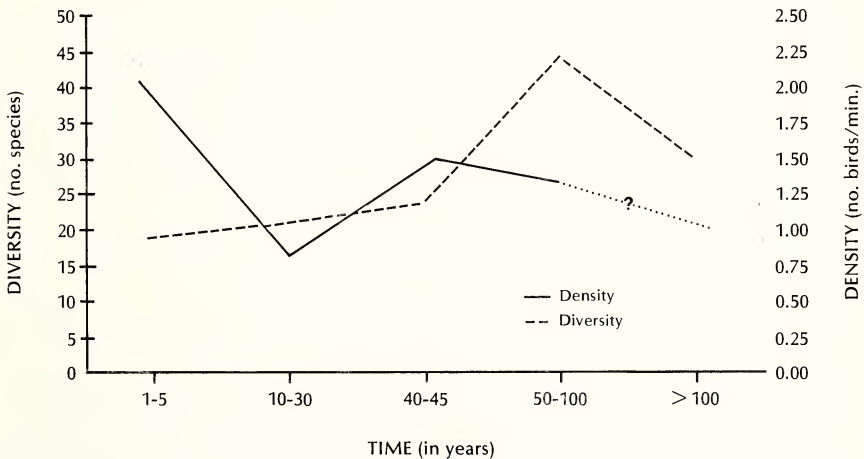


Fig. 8. The effect of vegetative succession in Carolina bays on bird diversity and density. Years 1 to 5, recently burned, low-shrub community (Fig. 3); years 10 to 30 intermediate- to high-shrub pocosin community (Fig. 4); years 40 to 45, young bay-forest community (Fig. 5); 50 to 100 years, mature bay-forest community (Fig. 6); greater than 100 years (projected for density), mature swamp-hardwood forest.

Several species of aquatic birds reach (or reached) the limits of their breeding ranges at sites in Carolina bays, and unusual vagrant aquatic species have also been found in bays. This is not particularly surprising in that bay lakes provide one of the few natural lentic communities in the southeastern coastal plain of the Carolinas. Perhaps of more significance, several species of woodland birds reach the limits of their breeding distributions in Carolina bays and pocosin-associated communities. In all cases these are birds of advanced-age bay forest. Although it is obvious that this community is important to these peripheral populations, the association may not be locally obligatory. Because the inner coastal plain has not to date been systematically surveyed during the nesting season, statements about the importance of Carolina bays to certain locally unusual land birds are speculative.

A modest number of local Carolina bays are currently under protection of the State Parks System, State Forests, or The Nature Conservancy. It appears that a good sampling is now in public ownership. However, the species composition of individual bays is dictated by fire-induced serial stages of succession, and land protection *per se* will not maintain diversity or unique elements of the biota. Forthcoming phases of Carolina bay conservation will need to address manipulating and coordinating successional patterns of individual bays.

ACKNOWLEDGMENTS

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APPENDIX A

Noteworthy Birds Associated with Carolina Bays During the Breeding Season

- Pied-billed Grebe: Post (1969) found 11 pairs on a 62-acre Carolina bay study site in Barnwell County, S.C.
- Double-crested Cormorant: Small numbers of adult- and juvenal-plumaged cormorants are seen from time to time on all the bay lakes and occur regularly on Black Lake. A single specimen collected there in late May 1982 appears to be the southeastern subspecies (*Phalacrocorax auritus floridanus*) or an intergrade with it, which implies the birds are residents and not lingering migrants.

- Anhinga: Individual birds were seen on Suggs Millpond, and Crutchfield and Whitfield (1987) discovered a small nesting colony on a bay converted into a millpond in Cumberland County.
- Least Bittern: Post (1969) and Norris (1957) each reported two nesting pairs in their Barnwell County study sites.
- White Ibis: Several adult individuals were seen at Smith Mill Pond from 19 to 21 May 1983. It is assumed that they had dispersed from the Battery Island breeding colony. They were encountered regularly around Lake Waccamaw.
- Waterfowl: None of the summer-resident waterfowl were commonly encountered, although all were believed to be nesting locally. Wood Duck nest-box programs at several sites and waterfowl management by a hunting club at Suggs Millpond enhanced some populations. At White Lake a semi-tame flock of wild Mallards has nested on the south shore for a number of years. Thirty-five individuals were counted from the single flock on White Lake on 3 July 1987.
- Osprey: Individual Ospreys were seen on White Lake and Singletary Lake (perhaps the same bird) in May and June of 1984. There is no present indication of local nesting, and to my knowledge there are no historic records of Ospreys nesting on any bay lakes.
- Bald Eagle: David Clark of Elizabethtown informed me of a single eagle nest that was active at White Lake during the 1950s. The nest was in the heavily wooded southwest section of the bay and could be easily seen only from the air. This is the only record of which I am aware of Bald Eagle nesting associated with bay lakes.
- Wild Turkey: A single bird was seen on 18 May 1983 crossing the sand rim at Singletary Lake. Although turkeys occur nearby in the swamps on the Cape Fear River, no others were seen during this study.
- King Rail: Post (1969) noted two pairs in the South Carolina bay he studied.
- American Coot: Post (1969) reported three pairs from his study site.
- Common Gallinule: Post (1969) recorded two nesting pairs, and Norris (1957) noted a summer visitor in each of the three bays he studied.
- Limpkin: A single bird was seen briefly at Smith Mill pond on 20 May 1983, flying from a heavily wooded swamp forest. The spotted plumage, slightly decurved bill, and characteristic awkward flight were noted. This represents only the second record for this species from North Carolina. The first was reported from Lake Waccamaw, a bay lake in Columbus County, by Wiley and Wiley in 1979 (Chat 40:94-95).
- Spotted Sandpiper: Individual birds and small groups of birds were seen regularly throughout the spring and were common through early June. Although this departure date is well into the birds' nesting season, there was no indication of local breeding.
- Common Nighthawk: These birds nest on bay sand rims in the eastern portion of the state (New Hanover and Brunswick Counties) and in the Sandhills. A hiatus between these two populations is present throughout much of the inner coastal plain. No nesting individuals were seen in Bladen County in spite of extensive inventory.

Chuck-will's-widow: Common on sand rims of bays, these birds were essentially absent from the interior of bays no matter what vegetative community was present.

Whip-poor-will: This species is uncommon on sand rims of bays, but it is found regularly along the Cape Fear River in Bladen County.

Belted Kingfisher: Although kingfishers were seen irregularly at most bay lakes, nesting individuals were confined to sites with earth dykes or similar artificial nesting areas.

Red-cockaded Woodpecker: Although these woodpeckers were found in several sandhill communities near bays in Bladen County, the only nesting association with bays was several cavity trees on the sand rim of Salter's Lake.

Eastern Kingbird: This species was common in low-shrub habitats with scattered Pond Pines and around the interior of bay forests bordering lakes.

Barn Swallow: Barn Swallows were common as nesting species on piers and docks on developed bay lakes. It is not known when they expanded their range into this section of the coastal plain, but they were nesting in small numbers at Jones Lake when I first visited this area in 1976.

American Crow and Fish Crow: Both species were recorded at most sites, with no indication of any local ecological preference for any habitat type. Interpretation was hindered, however, by the impossibility of separating fly-over individuals from birds nesting in the immediate vicinity, and by the large foraging area of nesting pairs.

Northern Mockingbird: This species was not encountered at any undisturbed bays, and only a few individuals were recorded around towns (White Lake, Lake Waccamaw) and farmlands within bays. Lee (1986) failed to find any breeding-season mockingbirds in his pocosin study, although a few individuals were recorded from disturbed pocosins in Dare County during the winter (Potter, pers. comm.).

European Starling: In addition to their presence around towns and farms in bays, starlings were found nesting in modest numbers in woodpecker cavities in Bald Cypress on the undeveloped side of Black Lake. Based on habitat in the immediate area, they must have commuted to foraging sites more than a mile from the nesting trees.

Black-and-white Warbler: Single pairs found at several bays in Bladen County represent some of the easternmost breeding-season records for the coastal plain.

Black-throated Green Warbler: Present in small numbers in most mature bay forests, these warblers were common in the White Cedar forest in Jerome Bog.

Worm-eating Warbler: These warblers were moderately common in Bladen County bays with mature bay forest. These populations represent some of the most eastern and southern ones known on the Atlantic coastal plain.

Louisiana Waterthrush: A single bird that appeared to be on territory was seen regularly throughout the 1983 nesting period in a Carolina bay 50 yards from the outlet of Singletary Lake. This represents the most southeastern breeding-season record for the state. Several other single-date sightings indicate the species is uncommon but widespread in the immediate area.

Chipping Sparrow: This sparrow was quite rare. Individuals were present in the sand-rim communities in Hoke County, and one was found in the same habitat at Singletary Lake in June 1983. This represents the eastern extreme of the nesting-season distribution of the Chipping Sparrow on the coastal plain. During the winter, however, these sparrows are quite common in the area.

Field Sparrow: Field Sparrows were found near White Lake at several small bays that supported farmlands of cultivated blueberries.

American Goldfinch: Though apparently uncommon, one group was heard on 26 May and 10 June 1984 in a hardwood forest on the sand rim of Bush Lake, and small numbers have been found every year since 1979 on the sand rim of the Hoke County bay.

House Sparrow: House Sparrows were recorded only at the towns of White Lake and Lake Waccamaw.

Backyard Birding

... with Gail T. Whitehurst

Oddities of Color, or Lack of Color, in Birds

One of the rewards of Backyard Birding on a consistent basis is catching sight of some of Nature's oddballs. Keeping a sharp eye out for the new, unusual, and differently marked bird enables the watcher not only to pick up a new species, but also to see some of the quirks of Nature. From time to time we get reports of albino birds, strangely marked birds, and birds with extra colors not normally found.

Before we go any further, we might stop here and remind our readers that during the post-nuptial molt we can, if not careful, be fooled by split-tailed robins, no-tailed towhees, and bald-headed cardinals and jays. The post-juvenal molt can also contribute confusion. For instance, the Rufous-sided Towhee undergoes a number of changes. The finely streaked head and breast of the fledgling, as these feathers are shed, go through a series of changes until the white breast, dark head, and rufous sides are well defined. These are the times when knowing one's birds well—size, shape, calls, and behavior—saves the birder from wasting much time and energy trying to find the "new" bird in the field guide.

To see an albino or partially albino bird is always interesting. Some years we get more reports of this phenomenon than others. Whether this has any significance or not, we do not know. We do not have any statistics on the probabilities of albinism. Perhaps the observers just happen to be in the right place at the right time. However, there is something fascinating about finding an all-white bird. The finder wants to share the sighting with others, and out come the cameras to provide proof. Oftimes the local news media, always on the look-out for something different, will publish pictures of the albino bird. Such was the case last year.

The Stanly News and Press, Albemarle, N.C., ran a nice story and pictures of an albino Eastern Bluebird discovered by James and Annabel Speight of the Red Cross community in Stanly County on 18 May 1986. They found one all-white fledgling, with pink eyes. The article discussed albinism in general and pointed out that complete albinism is very rare among bluebirds. With this rarity in mind, it went on to say that the Speights found another albino fledgling in the same birdhouse from a second brood hatched in July. After the latter bird died, the specimen was donated to the North Carolina State Museum of Natural Sciences.

R.A. DesPortes of Columbia, S.C., sent a picture of an albino Mockingbird he spotted on Edisto Island, S.C., on 29 June 1986. This bird, too, was a fledgling.

Although rare, an albino bird is easy to spot. When a bird of a different color (from that which it is supposed to be) appears at a feeder, it may go unnoticed. Once seen, though, it can attract much attention. One such case occurred in December of 1985 near Brevard, N.C. We wish to share with you this most unusual bird in the words of Betty H. McIlwain.

"On December 8, 1985 my friend, Virginia Brown, told me that a 'funny looking titmouse' had been seen at two feeders in her neighborhood. At 3:00 p.m. on December 15, 1985, I went with Virginia to her neighbor's yard. We watched this unusual bird for an hour. It made many trips to a feeder located on the deck of the house. The bird was feeding in the company of several other titmice as well as chickadees, nuthatches and downy woodpeckers. The contrast with the other titmice was startling . . . a very black back and head and a red-orange breast . . . the colors of our robin. When it was excited and the tuft was raised, I noticed a brownish tinge to the topmost feathers. . . . This bird has been a regular at the feeder during the winter and spring. The last report stated that it was seen May 15, 1986, and it is believed it has a mate." Mrs. McIlwain went on to state that the bird had been seen by a number of people. Many attempts were made to photograph the bird, but none came out very well. Possibly the black head and back were due to melanism (the presence of darker pigments than usual), another rare color deviation. The normal titmouse has the red-orange color on the sides, but it is rather pale. Such a "funny looking titmouse" certainly arouses the curiosity.

The Case of the Aggressive Towhee

All of us are familiar with aggressive behavior of birds scrapping for food at the feeders in winter. Also we see much fighting and chasing in the spring when birds are establishing territories, mating, and nesting. Generally, the latter occurs between birds of the same species. We have come to expect aggressive behavior from tyrant

flycatchers, wood warblers, and even hummingbirds. Robins and mockingbirds go after each other with a vengeance. But we do not expect such actions from the normally shy and gentle-appearing towhee.

Betty McIlwain of Brevard, N.C., an astute observer, has learned, as have we, that there are more questions than answers when it comes to why birds do what they do. She writes of an experience she had at her feeders on 13 December 1986. "At 8:50 a.m. there was activity at all feeders and on the ground. A Brown Thrasher and a White-throated Sparrow were enjoying left-over dressing from Thanksgiving that I had placed inside a wire tube feeder. Titmice and chickadees were swarming around the sunflower house, the Blue Jays were cleaning up the crushed shells from eight eggs I had thrown on the ground the previous evening. Mourning Doves, juncos, Song Sparrows and several White-throated Sparrows were pecking at the cracked corn in the area of the bird bath. A male Rufous-sided Towhee flew into the yard, landed in front of the bird bath, then moved to within 2-3 inches of the back of one of the doves. He then lunged toward the dove and caught the tip of the dove's tail. The startled dove ran and fluttered forward with the towhee hanging on until after traveling over three feet the dove made an abrupt right turn into the base of a bush at which time the towhee fell away [and] flew from the yard. At 9:24 a.m. a male towhee arrived and landed in front of the bird bath and immediately moved toward a Song Sparrow in a very aggressive manner. In a few seconds he made the same move toward a White-throated Sparrow. . . . As a long-time backyard birder I have seen 'claiming of space' by many species, but I have never seen behavior such as the towhee took against the Mourning Dove. I never saw any aggressive move toward the towhee by any of the other birds. In fact, I did not see any threat. There was plenty of cracked corn scattered over a large area. Evidently the towhee did not see things my way. What a surprise that he would or could cling to the tail tip of a fast-moving Mourning Dove!"

Well! We can certainly appreciate Mrs. McIlwain's puzzlement as to why the towhee attacked the dove when there was plenty of food for all. However, I did not find it too surprising. As mentioned in my article, "We created a Monster" (Chat 49:36-38,48), we encountered a great deal of aggression between birds of the same and other species when it came to getting food—both in winter and during the nesting season. Since we will never know how a bird "thinks," observation of its behavior is the best we can do.

Some species of birds seem to be more aggressive than others. We have noted that within a species, some individuals are more aggressive than others. So often we glimpse only one bit of behavior that may be part of an activity begun out of our sight. While we might say that a Rufous-sided Towhee is not as "feisty" as an American Robin or a Northern Mockingbird, for instance, we have noted times when two males (disputing territory) can engage in a "knock-down drag-out" fight. I have frequently seen two male towhees down on the ground, feet locked together, pecking at each other furiously. They are not always so kind to the females, either. My notes reveal that on 30 April 1978 I saw "a male towhee chasing a female towhee. She flew up to small limb of sweetgum tree. Male followed and grabbed her (with beak) by tail feathers—about one inch from tip. He held on, swinging for several seconds before releasing his hold."

Bits and Pieces, Odds and Ends, or Whatever

In response to our discussion of "Birdsong Fun" (Chat 50:10-11), Robert G. Wolk of Raleigh, N.C., wrote on 23 April 1986:

"I enjoyed your note in the current issue of *Chat* on bird songs and cannot help but share with you what is probably my favorite. It is that of the Warbling Vireo, which I used to hear while walking to work in Canton, New York: 'When I see you, I will seize you and I'll squeeze you till it squirts!' I believe the words originated with Arthur A. Allen, of Cornell, who invented many English remarks for birds.

"The Olive-sided Flycatcher is not the only beer-loving singer. The Henslow's Sparrow, perched on a weed stalk in a pasture, calls specifically for 'Schlitz!'"

Shortly after I sent copy for that column in *Chat*, I heard a Carolina Wren advertising, "T-shirt, T-shirt."—GTW

It is good to get responses from Backyard Birding and to share them with our readers. On 14 August 1987, Ric Carter of Washington, N.C., sent the following:

"I thought to share a couple of odd feeding observations with you.

"In the late spring of this year, my wife Kitty and I, on several occasions, noted a large, if not obese, female Carolina Anole around our deck. On 29 June, Kitty discovered a possible reason for the rotund stature of the lizard. She watched the Anole climb carefully down the monofilament holding one of our hummingbird feeders and spend almost ten minutes sipping colored sugar water from one of the four feeding stations. A female Ruby-throated Hummingbird even shared the feeder with the Anole without seeming to notice anything unusual.

"Near the end of July, I built and hung a doughnut feeder. . . . It has been a source of frustration for [me] and inattention for my summer feeder birds until yesterday.

"While [I was] eating dinner on the deck last evening, [the doughnut feeder] was finally visited. An immature male Ruby-throated Hummingbird flew in, and lit and grabbed something on the feeder. Although the view wasn't clear, I suspect he snatched one of the several ants moving about on the 5 X 5 inch platform. He's still the only bird to pay attention to this feeder."

As many of us are aware, birds have a healthy fear of snakes, and well they might, for snakes frequently feed on eggs, nestlings, and fledglings. Dave Abraham, of Columbia, S.C., sent along an observation dated 1 February 1986.

"On the jays, they can also scream about snakes. Last summer, when they had young on the ground in the vicinity, I heard four of them making a great racket on the fence. I went over to it and there was a large snake, snaking along at a good speed in my neighbor's yard, leaving tracks on bare raked earth. Looked like bicycle tracks. It disappeared into my flower bed, but doubled back to my neighbor's and then I saw one Jay drop onto a pile of pine straw and cock his head while he sat peering at it. I told my neighbor and he lifted up the straw and shot the snake twice. It was about five feet long and big as one's wrist. He said it was a copperhead."

For those of you who do not care for Blue Jays—see, they can do something worthwhile for us humans. Who wants a copperhead so close to home?—GTW

General Field Notes

E. WAYNE IRVIN

North Carolina Editor
North Carolina State Museum
P.O. Box 27647
Raleigh, N.C. 27611

WILLIAM POST

South Carolina Editor
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

First Specimens of the Nashville Warbler From Coastal South Carolina in Fall

W. POST and P.S. COLEMAN
The Charleston Museum
360 Meeting Street
Charleston, S.C. 29403

In the fall of 1985 and of 1986, we captured two Nashville Warblers (*Vermivora ruficapilla*) in the vicinity of Charleston, Charleston County, S.C. The first was mist-netted on 29 October 1985 at Hog Island, Mount Pleasant. The habitat was a patch of tall (1.5-1.8 m) forbs (*Sebsbania*, *Amaranthus*, *Ambrosia*). The specimen (Fig. 1; ChM 1987.3.197) was prepared as a standard study skin. It is an immature (skull not fully ossified) female weighing 7.5 g and having a wing chord of 58.1 mm. The second, an immature male, was netted on 3 November 1986 near Fort Moultrie, Sullivans Island, in a copse of Wax Myrtle (*Myrica cerifera*) that averaged 3 m high. The bird (ChM 1987.3.198) was prepared as a study skin with detached, flattened wing. It weighed 8.7 g, and its wing chord was 58.0 mm.

Only four other specimens have been collected in the state. The first was taken at St. Helena Island, Beaufort County, on 1 May 1892. The collector is unknown, but was probably W.J. Hoxie. The specimen was apparently deposited in the Field Museum (Contr. Charleston Museum XI, 1949, p. 445), but cannot now be located (M.D. Maurer, Field Museum, pers. comm.).

The second specimen was taken by G.E. Hudson on 27 April 1927 at Clemson, Anderson County (Contr. Charleston Museum XI, 1949). It is now in the collection of Clemson University (CU 748). The third specimen, and first fall record for the state, was a bird picked up by R.A. Norris under a TV tower at Beech Island, Aiken County, on 5 October 1957 (Contr. Charleston Museum XIV, 1963, p. 49). Burton (Suppl. to Contr. Charleston Museum XI, 1970) stated that this specimen had been given to A.R. Phillips, and incorrectly cited Norris (op. cit.) as the authority for this statement. Further, the specimen was never in the possession of Phillips (pers. comm., A.R. Phillips), and its whereabouts is now unknown. It is possible that it was lost in a fire that destroyed many of Norris' specimens (Norris, pers. comm., fide J. Laerm, Univ. Georgia). Another fall specimen was collected by P. Hamel on 2 October 1978 at Clemson (CU 1065).



Fig. 1. Nashville Warbler captured on 29 October 1985, Mount Pleasant, Charleston County, S.C. (Photo by Jo Fetzer)

In summary, the Nashville Warbler is a rare migrant in the state, and we now have only four specimens to document its occurrence. The species is easily confused with other *Vermivora*, and additional collecting or banding is needed to verify its occurrence in the state.

We appreciate the efforts of Nancy Pringle, who typed the manuscript, and Jo Fetzer, who took the photograph.

Kirtland's Warbler Seen in Iredell County, N.C.

ZORA R. WEISBECKER

P.O. Box 162

Rutherfordton, N.C. 28139

On 29 August 1982, as I was taking my morning walk around the main lake at Allison's Woods, Iredell County, N.C., I saw a male Kirtland's Warbler (*Dendroica kirtlandii*) in a young Shortleaf Pine (*Pinus echinata*) thicket growing at the highest point along the trail, approximately 40 feet above the lake, in a mixed pine-hardwood forest. I watched the bird for about 15 minutes as it remained perched on a low limb about 20 feet from me. It appeared quite tame, and I distinctly saw through binoculars the bird's white eye ring, its gray back with black streaks, its yellow breast with black streaks only along the sides, its narrow wing bars, and its tail-wagging behavior. I recognized the bird immediately as a Kirtland's Warbler

because I have seen the species at least a hundred times in a film I show to my biology students. *Patterns of the Wild* has a segment on the management of the nesting habitat of the Kirtland's Warbler in the Jack Pine forest of central Michigan.

Allison's Woods is well known to members of the Iredell Nature Society for its excellent warbler habitat. The 1,500-acre estate has been in the Allison family since it was obtained by royal grant in the early 1740s. Bordering the South Yadkin River and Rocky Creek, Allison's Woods is a mixture of farmland and forest; it has several woodland ponds and small lakes. The 15-acre main lake is surrounded by old second-growth pines and hardwoods. Timber cutting has been selective, primarily to remove diseased trees. My husband and I are fortunate to have lived in Allison's Woods from 1980 to 1983.

On the morning of 29 August 1982, I took my binocular with me because I was expecting to see early migrants. A cold front, unusual for that time of year, had caused the morning temperature to drop into the mid-50s. As I had anticipated, the area was alive with warblers. In addition to the Kirtland's, I distinctly remember seeing the following warbler species: Black-and-white (*Mniotilta varia*), Black-throated Blue (*Dendroica caerulescens*), Blackburnian (*Dendroica fusca*), American Redstart (*Setophaga ruticilla*), and a male Golden-winged (*Vermivora chrysoptera*)—my first observation of that species.

It is interesting to note that the Kirtland's Warbler was in habitat similar to that in which other fall migrants of this species have been seen in the Southeast. According to *Birds of the Carolinas* (Potter, Parnell, and Teulings, University of North Carolina Press, 1980), they "appear to frequent thickets and woodland edges on high ground just beyond the wet margins of lakes and swamps."

I thank Thomas L. Quay, my former ornithology professor at North Carolina State University, for encouraging me to submit this field note.

CBC Rare Bird Alert — New Phone Number

704/332-BIRD

BRIEFS FOR THE FILES

HARRY E. LeGRAND JR.

(All dates 1986)

RED-THROATED LOON: Ricky Davis saw individuals at Jordan Lake in Chatham County, N.C., on 28 October and 23 November.

COMMON LOON: One was very early on 16 August at Lake Julian near Asheville, N.C. (Ruth and Jerry Young).

PIED-BILLED GREBE: Undoubtedly an early migrant or post-breeding visitor was one on 3 August, as noted by Paul Hart at Crowders Mountain State Park, N.C.

CORY'S SHEARWATER: Quite late were two Cory's seen from shore by John Fussell and Robert Hader on 27 November at Atlantic Beach, N.C.

AUDUBON'S SHEARWATER: One was found alive at a ball field a few miles inland in Havelock, N.C., on 5 August (fide John Fussell).

WILSON'S STORM-PETREL: Somewhat "inland" was one seen by Harry LeGrand and Ricky Davis on 24 August in Roanoke Sound, N.C., adjacent to the US 64-264 bridge.

LEACH'S STORM-PETREL: The only fall reports on North Carolina pelagic trips were several off Oregon Inlet on 15 August and one off the inlet on 9 November (both Dave Lee).

BAND-RUMPED STORM-PETREL: Excellent totals were 70+ off Oregon Inlet on 15 August (Dave Lee et al.), 16 off Hatteras Inlet, N.C., on 28 August (Robert Ake, Paul DuMont), and 35+ off Oregon Inlet on 2 September (fide Bill Brokaw).

WHITE-TAILED TROPICBIRD: Single birds were noted by Dave Lee and party off Oregon Inlet on 15 August and off Oregon Inlet on 2 September (fide Bill Brokaw).

MASKED BOOBY: Seldom seen from shore was one, a subadult, feeding in the surf at Cape Hatteras point, N.C., on 1 September (Harry LeGrand, Merrill Lynch, Benton Basham, Bill Brokaw).

NORTHERN GANNET: Heathy Walker saw an immature on the unusual date of 11 August at North Litchfield Beach, S.C.

AMERICAN WHITE PELICAN: An excellent state count was five seen at Bogue Inlet, N.C., on 29 October by Henry Haberyan.

GREAT CORMORANT: On 28 November, two were at Atlantic Beach, N.C. (John Fussell, Robert Hader) and one was at Masonboro Inlet, N.C. (Steve Everhart). Robin Carter saw three adults at Murrells Inlet, S.C., on 23 November.

DOUBLE-CRESTED CORMORANT: Notable for the mountains was one seen at Lake Julian near Asheville, N.C., on 16 August by Ruth and Jerry Young.

LEAST BITTERN: Douglas McNair observed two adults on 19 August, and one on 27 August, at the same marsh in Hendersonville, N.C., where the species was seen in 1985. This is the only known site where breeding by bitterns might be occurring in the mountains.

REDDISH EGRET: One, apparently a subadult, was seen at the western end of Long Beach, N.C., on 4 August by Fran Irvin.

WHITE IBIS: As many as 15 were seen at Jordan Lake during August by Bill and Margaret Wagner.

WOOD STORK: At the Silver Bluff Audubon Sanctuary, S.C., near Augusta, Ga., from 80 to 96 storks were present in late summer and fall (Dan Connelly et al.).

FULVOUS WHISTLING-DUCK: Rare in North Carolina were one in late October near Cape Hatteras (Elizabeth Ball) and four at a sewage disposal plant near Carolina Beach from 22 October to 2 November (Kitty Kosh).

GREATER WHITE-FRONTED GOOSE: An excellent count was 11 seen on 27 November at Santee National Wildlife Refuge, S.C., by Robin Carter and Caroline Eastman.

ROSS' GOOSE: The earliest ever for North Carolina was an adult observed at Pea Island on 18 October by Allen Bryan, Ricky Davis, and John Fussell.

BLUE-WINGED TEAL: One was late for the mountain region on 27 November at Hendersonville, N.C. (Douglas McNair).

EURASIAN WIGEON: Single males were seen at Pea Island, N.C., on the early date of 18 October (Allen Bryan, Ricky Davis, John Fussell) and at Bodie Island, N.C., on several dates in November (Harry LeGrand, Ricky Davis, and others).

BLACK SCOTER: John Fussell and Robert Hader saw one on the early date of 7 September at Cedar Island, N.C.

SURF SCOTER: Very rare inland were single birds seen at Crowders Mountain State Park, N.C., on 10 November by Paul Hart and Heathy Walker, and at Roanoke Rapids Lake, N.C., from 29 October to 6 November by Frank Enders.

WHITE-WINGED SCOTER: Frank Enders observed two birds at Roanoke Rapids Lake on 29 October.

COMMON MERGANSER: Early were two males and a female at Woodlake, near Vass, N.C., on 11 November, as noted by Dick Thomas.

RED-BREASTED MERGANSER: Ruth and Jerry Young had a good mountain count of 18 at Lake Julian on 21 November.

TURKEY VULTURE: A migrant was rare on the Outer Banks at Avon, N.C., on 23 October (John Fussell).

AMERICAN SWALLOW-TAILED KITE: A late kite was seen by Robin Carter and Caroline Eastman on 3 October at the I-20 crossing over the Wateree River, S.C. Unusually far west were two birds seen from early August to 3 September at numerous sites between Black Mountain and Old Fort, N.C. (Don Slye, Robert Ruiz, Laura Mansberg, and others).

MISSISSIPPI KITE: A pair nested near the yard of Mr. and Mrs. Ray Wallace in Cheraw, S.C., in 1985 and 1986. Extremely late was an adult or subadult on 9 November just south of Elizabethtown, N.C. (Philip Crutchfield).

NORTHERN GOSHAWK: An adult seen in the Mills River bottoms in Henderson County, N.C., on 8 September by John Young suggests the possibility of breeding in the area. Despite a handful of summer records for the mountains, there is no conclusive evidence of breeding in North Carolina (but see Chat 49:85-87).

GOLDEN EAGLE: Individuals were seen in the North Carolina mountains at Black Balsam Knob in southern Haywood County on 8 August (Douglas McNair) and at Swannanoa on 5 October (Robert Ruiz). [Biologists from the Tennessee Valley Authority have been hacking and releasing Golden Eagles in southern Haywood County for the past few summers, and it is probable that a number of recent sightings for the mountains, particularly in the summer, are of birds released in North Carolina in the attempt to establish a nesting population there.—HEL] Very rare in the piedmont was an immature seen by Ricky Davis flying over Jordan Lake on 28 October.

MERLIN: Individuals were seen inland in North Carolina at Butner on 16 September (Harry LeGrand, Merrill Lynch), Jordan Lake on 24 October (LeGrand, Ricky Davis), Fairview in Buncombe County on 1 November (Ruth and Jerry Young), Fayetteville on 9 November (Jim Sipiora), and central Halifax County on 30 November (Frank Enders).

PEREGRINE FALCON: One was seen near Raleigh on 12 October by Harry LeGrand, and another was seen at Jordan Lake on 28 October by Ricky Davis. A good coastal flight of this increasing species was seen on the Outer Banks during the Carolina Bird Club meeting (3 to 5 October), with at least 25 birds noted.

- BLACK RAIL:** At a TV tower near Awendaw, S.C., dead individuals were picked up on 7 October by Sidney Gauthreaux and on 10 October by Carroll Belser.
- SORA:** Douglas McNair noted six birds at Hendersonville on 12 August and singles there on 19 and 27 August. He also noted one at Cashiers, N.C., from 29 August to 5 September.
- COMMON MOORHEN:** A rare inland migrant was seen by Philip Crutchfield near Fayetteville on 9 September.
- SANDHILL CRANE:** John Batson and others saw a crane on 9 November near Townville, S.C.
- BLACK-BELLIED PLOVER:** Rarely seen in the mountains was one at Hendersonville on 12 August (Douglas McNair). One was at Roanoke Rapids Lake on 4 and 11 August (Frank Enders), and a peak count of seven was made by Ricky Davis at Jordan Lake on 11 August.
- LESSER GOLDEN-PLOVER:** Surprisingly, the only inland reports for the fall season were from Jordan Lake, where one was seen on 16 August by James and Elizabeth Pullman, and others were present from 1 October to 7 November with a peak of five on 28 October (Ricky Davis et al.). There were numerous coastal reports for the season, but the only count of more than two birds was of four plovers at the Beaufort, N.C., airport on 2 September (John Fussell).
- AMERICAN OYSTERCATCHER:** Derb and Ann Carter had an excellent count of 300 at Bald Head Island, N.C., on 27 September.
- SOLITARY SANDPIPER:** A high total of 50 Solitaries was noted by Ricky Davis at Jordan Lake on 7 August.
- UPLAND SANDPIPER:** Inland sightings were of single birds at Jordan Lake on 11 August (Ricky Davis), in central Halifax County on 12 August (Frank Enders), and at Six Mile, S.C., on the very late date of 10 October (Douglas McNair).
- WHIMBREL:** Herb Hendrickson reported one found dead on a road near Greensboro, N.C., on 5 September.
- LONG-BILLED CURLEW:** One was seen at Wrightsville Beach, N.C., on 25 August by Greg Massey, and another was observed at Hunting Island State Park, S.C., from 19 to 30 August (David Brown, Kristin Poulsen, Dave Sibley).
- HUDSONIAN GODWIT:** Seldom found in South Carolina were three seen at the dredge spoil site near Savannah, Ga., on 30 August (Dave Sibley). Only the second ever record for inland North Carolina was four birds at a quarry at New Bern from 1 to 9 November (Bob Holmes, Rich Boyd). One was seen at Hatteras Inlet, N.C., on 1 September (Jay Sheppard, Arnold Small, David Pearson), in addition to the usual records farther north at Bodie and Pea Islands.
- RUDDY TURNSTONE:** Remarkable numbers were present at Jordan Lake in the fall; 15 were there on 7 August (Ricky Davis, Harry LeGrand), 38 were counted on 11 August by Davis, and 35 were tallied on 13 August by LeGrand. Bill and Margaret Wagner saw seven more turnstones on 11 August at Falls Lake in Durham County, N.C.
- RED KNOT:** Very rare inland were single birds seen by Ricky Davis at Jordan Lake on 11 August and from 21 to 24 October.
- SANDERLING:** At Jordan Lake, the species was present as early as 7 August (Ricky Davis, Harry LeGrand) and as late as 2 November (James and Elizabeth Pullman); the peak count was 10 on 13 August (LeGrand). Three were reported by Merrill Lynch at Falls Lake on 16 October.
- SEMPALMATED SANDPIPER:** A very good inland count was 115, made by Ricky Davis on 11 August at Jordan Lake.
- WHITE-RUMPED SANDPIPER:** A fairly good total for South Carolina was 15 at the spoil site near Savannah on 30 August (Dave Sibley). Inland reports were of one at New Bern,

- N.C., on 12 October (Bob Holmes), one at Jordan Lake from 11 to 15 August (Ricky Davis), and two at Jordan on 24 October (Davis, Harry LeGrand).
- BAIRD'S SANDPIPER:** All records for the season were from the North Carolina coast, where single birds were noted at Bodie Island on 5 October (Harry LeGrand, Derb Carter, et al.); at Pea Island on 15 August and 11 October (John Fussell); at Cape Hatteras point from 4 to 11 October, with two birds on the first date (Derb Carter, Merrill Lynch, et al.); and one at Bogue Inlet on 24 October (James and Elizabeth Pullman).
- DUNLIN:** Six were seen near Fayetteville on 29 October by Philip Crutchfield, and three were seen by Herb Hendrickson near Greensboro on 24 October. Phenomenal numbers were present in late fall at Jordan Lake, with 60 on 17 October and 80+ in late November (Bill and Margaret Wagner).
- STILT SANDPIPER:** An excellent count of 60 birds was made by Ricky Davis at Jordan Lake on 11 August, and one was rather late there on 24 October (Davis, Harry LeGrand). Dave Sibley saw three inland near Jackson, S.C., on 15 September and 25 near the coast at the Savannah dredge spoil area on 30 August.
- BUFF-BREASTED SANDPIPER:** The only report for the fall was one at Cape Hatteras point on 4 and 5 October, seen on a Carolina Bird Club field trip.
- RUFF:** One of the few records for South Carolina was one seen well by Robin Carter on 2 November at the Santee Delta Game Management Area in southern Georgetown County.
- LONG-BILLED DOWITCHER:** Quite rare inland were one seen at Jordan Lake on 7 August by Ricky Davis and Harry LeGrand and two noted there on 21 October by Davis.
- WILSON'S PHALAROPE:** The only fall sighting away from the North Carolina Outer Banks was one on 29 August at Eagle Island near Wilmington, N.C. (Kitty Kosh).
- RED-NECKED PHALAROPE:** An excellent find was one seen by Eric Dean at the Goldsboro, N.C., waste treatment plant on 23 and 24 September.
- POMARINE JAEGER:** Notable on land were single immatures at Cape Hatteras point on 31 August (Harry LeGrand, Merrill Lynch) and from 4 to 18 October by the above observers, John Fussell, and others.
- PARASITIC JAEGER:** Allen Bryan and Ricky Davis saw a good flight of jaegers at Cape Hatteras point on 17 October—three Parasitics, four Pomarines, and two unidentified jaegers.
- LONG-TAILED JAEGER:** One was collected for the N.C. State Museum by Dave Lee on the late date of 9 November off Oregon Inlet.
- LAUGHING GULL:** At Jordan Lake, two were seen on 17 August (Harry LeGrand), and one was noted on 8 November (LeGrand, Ricky Davis). Two immatures were observed by Merrill Lynch on 13 October at Roanoke Rapids Lake, N.C.
- FRANKLIN'S GULL:** The fourth North Carolina record was a first-year bird photographed by John Fussell at North Pond on Pea Island on 26 October and 8 November.
- HERRING GULL:** Quite early inland was an immature seen at Jordan Lake on 15 August by Ricky Davis.
- ICELAND GULL:** Henry Haberyan observed an immature on the very early date of 15 October at Bogue Inlet, N.C.
- GLAUCOUS GULL:** One was early at Topsail Beach, N.C., on 22 October, as seen by Gail Whitehurst.
- BLACK-LEGGED KITTIWAKE:** Dave Sibley saw an immature flying along the beach on the extremely early date of 29 August at Hunting Island State Park, S.C.
- CASPIAN TERN:** This species was seen at a handful of inland lakes this fall, with the highest

count being nine at Roanoke Rapids Lake on 9 September (Frank Enders).

SANDWICH TERN: Two birds, along with six Royal Terns, were displaced somewhat inland to Lake Mattamuskeet, N.C., by Hurricane Charley on 18 August, as noted by John Fussell and Ray Winstead.

ARCTIC TERN: Seldom seen from shore was an adult noted resting with a large flock of Common Terns, during strong NE winds, at Cape Hatteras point. Wayne Irvin, Bob Odear, and P. William Smith observed the tern on 30 August.

FORSTER'S TERN: Rare for the mountains were two seen by Douglas McNair at Hendersonville on 19 August and two noted by Ruth and Jerry Young at Lake Julian on 17 November. A notable tally of 11 was made by Herb Hendrickson on 9 August at Lake Townsend near Greensboro; whereas fairly late for an inland site were at least three at Roanoke Rapids Lake on 24 November (Frank Enders).

SOOTY TERN: One was seen off Beaufort Inlet, N.C., on 20 August by Derb Carter.

WHITE-WINGED DOVE: The first North Carolina record in several decades was one seen in flight along a dike at North Pond on Pea Island. Ricky Davis and Derb Carter saw it on 6 October.

BLACK-BILLED CUCKOO: The only fall sightings were at Pea Island on 22 August (Ricky Davis), at Bald Head Island on 28 September (Derb Carter et al.), and along the Savannah River near Jackson, S.C., on 24 October (Dave Sibley).

SHORT-EARED OWL: Ricky Davis and Harry LeGrand saw one migrating high over Jordan Lake on 24 October; it was being mobbed by crows. Another inland report was one found injured near Badin, N.C., on 27 November and taken to the Carolina Raptor Center (fide Dick Brown).

RUFIOUS HUMMINGBIRD: An adult male was present at a feeder in Hendersonville from 5 November to 13 December. Because the home owner, Sue Ballard Gilliam, was moving, an employee of the N.C. Zoological Park trapped the bird to keep it over winter at the zoo. However, the hummingbird died soon afterward, and it is now a specimen at the N.C. State Museum.

OLIVE-SIDED FLYCATCHER: The only fall sightings were reported by Dave Lee: birds at two places near Kelly, Bladen County, N.C., on 26 August, and one near Elk Park, Avery County, N.C., on 13 September.

YELLOW-BELLIED FLYCATCHER: One was seen and heard calling at Wilmington on 29 August by Kitty Kosh.

BANK SWALLOW: Three were carefully studied on the very late date of 3 November at New Bern by Rich Boyd.

CLIFF SWALLOW: Scarce along the coast were five seen by Ricky Davis and Harry LeGrand at Cape Hatteras on 9 August.

FISH CROW: An excellent piedmont total was 207 counted by Merrill Lynch at Ringwood, Halifax County, N.C., on 13 October.

COMMON RAVEN: Robin Carter and Caroline Eastman heard one calling at Caesar's Head State Park, S.C., on 14 October.

GOLDEN-CROWNED KINGLET: The species may have bred at the Walhalla Fish Hatchery, S.C., this summer, and one was seen there on 31 August (Caroline Eastman, Robin Carter), probably one that was present in summer.

WHITE-EYED VIREO: One that Bill Hilton Jr. banded at York, S.C., on 27 October was recaptured as late as 29 November.

PHILADELPHIA VIREO: Individuals were seen in North Carolina at Bodie Island on 1 September (Wayne Irvin), at Falls Lake on 14 and 18 September (Ricky Davis), at Crowders Mountain State Park on 26 September (Paul Hart), and at Pea Island on 5 October (Harry LeGrand).

GOLDEN-WINGED WARBLER: Dave Sibley had six records in the Aiken, S.C., area from 4 to 15 September, an excellent total for the Fall Line vicinity. Another was at Goldsboro, N.C., on 17 September (Eric Dean).

LAWRENCE'S WARBLER: One female was seen by Dave Sibley at Savannah National Wildlife Refuge, S.C., on 17 August.

NASHVILLE WARBLER: In addition to several inland reports for the fall, one was seen at Fort Fisher, N.C., on 28 September by Kitty Kosh.

YELLOW-RUMPED WARBLER: A female or immature was seen by Douglas McNair at Linville Falls, N.C., on 12 August. No breeding evidence was noted.

BLACKBURNIAN WARBLER: Rather rare along the coast were two observed by Greg Massey at Fort Fisher on 30 August.

CERULEAN WARBLER: This is an early and rare fall migrant through the Carolinas. In North Carolina, one was seen on 29 August at Falls Lake (Ricky Davis), and two were noted at Carolina Beach State Park on 30 August (Greg Massey). In South Carolina, one was seen on 9 August along the North Edisto River in Orangeburg County (Robin Carter), one was seen on 26 August near Jackson (Dave Sibley), and singles were seen on 5 and 11 September at Aiken (Sibley).

CONNECTICUT WARBLER: One was noted by Kitty Kosh in Wilmington on 4 September, and another was seen by Harry LeGrand, Merrill Lynch, and others at Pea Island on 5 October.

DICKCISSEL: The only fall report was one noted calling overhead at Pea Island on 4 October by Ricky Davis.

LARK SPARROW: Very rare inland was one observed by Dave Sibley on 3 November at Aiken.

HENSLOW'S SPARROW: Seldom seen in migration was one on 17 October at First Colony Farms near Lake Phelps, N.C. (Allen Bryan, Ricky Davis).

LE CONTE'S SPARROW: Dave Sibley saw one in a drained lake bed at Aiken on 28 October. This locality is possibly within the regular winter range of this species.

SHARP-TAILED SPARROW: An excellent inland find was one seen at Jordan Lake on 12 October by James and Elizabeth Pullman.

LINCOLN'S SPARROW: One was banded by Bill Hilton Jr. on 12 October at York, S.C. Other migrants were seen at Raleigh on 22 November (Harry LeGrand) and near Fayetteville on 29 November (Philip Crutchfield, Jim Sipiora). Three were on their wintering grounds at First Colony Farms near Lake Phelps on 17 October (Allen Bryan, Ricky Davis).

WHITE-CROWNED SPARROW: A very high count was 75+ seen in hedgerows at the Caledonia Prison Farm near Tillery, Halifax County, N.C., on 23 November by Merrill and Karen Lynch.

SNOW BUNTING: The only sightings, as expected, were from the North Carolina coast: one at a dike of South Pond at Pea Island on 1 and 2 November (Harry LeGrand, Ricky Davis), one on 1 November at the Cedar Island ferry terminal (John Fussell), and another at Fort Macon at the end of November (fide Fussell).

YELLOW-HEADED BLACKBIRD: Single individuals were coastal visitors to Will Post's feeder on Sullivans Island on 5 and 6 September, at Ocracoke Island, N.C., on 4 October (Derb Carter, Merrill Lynch), and at Pea Island on 4 and 5 October (Carolina Bird Club members).

RED CROSSBILL: Seldom seen in South Carolina in the summer were a male and a female reported by Robin Carter and Caroline Eastman on 31 August in northern Pickens County.

AMERICAN GOLDFINCH: Apparently somewhat to the east of the breeding range were an adult male at Oriental, N.C., on 19 August (Dorothy Foy) and two at a feeder in Morehead City, N.C., in late August (Susan Boase).

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